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WOMEN AND MINORITIES

A Total Human Resource Data Compendium

COMMISSION ON PROFESSIONALS IN SCIENCE AND TECHNOLOGY

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A Total Human Resource Data Compendium

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FOREWORD

This book is designed to provide current and historical data about the professional segment of the U.S. population, and particularly, the participation and availability of women and members of racial and ethnic minorities in those areas which generally require formal education to at least the baccalaureate level. Because more information is available in some fields than in others, the comprehensiveness of coverage varies. Although we have tried to locate all available data sources, and to provide the most current data available, we welcome information that we may have missed. Between annual editions of this report, new data are published regularly in ***MANPOWER COMMENTS,*** a periodical digest available from the Commission on Professionals in Science and Technology.

We wish to thank those professional associations, women's groups and individuals who have responded to our request for current information or data, and for their permission to use that data in this compilation. We also express our appreciation to the more than 2,500 users of earlier editions for their continued interest in the data both to measure their progress and to formulate plans. Special thanks go to Richard C. Vetter, without whose assistance in preparing tables and charts, this edition would not have been possible.

Betty M. Vetter, Executive Director
Commission on Professionals in Science and Technology

INTRODUCTION

Organization of the book

The data tables are organized in ten chapters, with both tables and charts numbered consecutively within each chapter.

The **Table of Contents** outlines both the chapter arrangement and the organization of tables within the chapter. The first five chapters on general enrollments, degrees, professions, and the general and academic workforce include both tables which do not specify subject fields and tables where several subject fields are included. In the section on the professions, data for some of the individual professions (law, business administration) follow tables covering multiple fields. Further information on medical and health fields is in the second half of Chapter VIII, following the biological and agricultural sciences.

Tables in chapters six through ten, which are devoted to subject fields, first provide data on degrees (doctorates first); followed by enrollments, general, academic, and finally the federal workforce. Except for tables which include both sex and minority breakouts, those which delineate the population by sex generally precede those which delineate by minority status.

The **Index** is by page number. **The Index, rather than the Table of Contents, is the place to begin a search for data in a particular field,** since enrollment, degree and employment information about that field may occur throughout the book. Cross indexing allows you to find the data references in a number of ways.

More than 200 published and previously unpublished data sources were used to prepare the statistical tables and charts in this book, including reports and other materials from government agencies, professional associations and women's and/or minority groups and caucuses. The data source for each table is listed above the table. More complete information about the sources will be found in the Bibliography beginning on page 268. The bibliography is organized alphabetically by publisher.

Generally, data from one survey does not correlate exactly with that from a different survey because of different definitions used by the surveyors, different samples, different sampling times, and different types of respondents. For example, degree data collected by the Center for Education Statistics is obtained from college and university registrars, while that collected by the National Research Council comes from the doctorate recipients themselves, and that collected by the Engineering Manpower Commission comes from the Deans of Engineering. Thus, while degree data will be similar, it is not identical from one source to another, usually because of differences in field taxonomy.

Different methods of analysis, particularly in data on minorities, also will produce different statistical results. The several problems for the data analyst include the method of treatment of non-respondents, the respondents who list multiple minority status, responses from a third party rather than from the individuals themselves, inclusion or exclusion of non-citizens in the survey population or unrepresentative population samples. Differences in treatment of non-respondents to questions of sex or ethnicity result in large statistical differences calculating the proportion of minorities or women within a particular population.

Some surveys assume that non-respondents to the sex or ethnic question are in the same proportion as respondents, and remove all non-respondents before calculating the percentage of women and minority participants. Others calculate percentages from a total which includes non-respondents, thus giving a lower percentage for minorities than may be the case. Additionally, some studies dealing with minority populations do not separate foreign nationals from U.S. citizens. This single factor, particularly within the Asian minority among doctoral level scientists and engineers, changes the sex and minority proportion substantially, as does the inclusion of foreign nationals in the base numbers for enrollments and degrees in such graduate fields as engineering. This edition includes more data than were previously available on citizenship, particularly in the science and engineering fields. Table titles designate inclusion of U.S. Citizens only, or of total population.

Although minority data often are not available by sex, and conversely, data on women generally fail to distinguish majority from minority women, this edition includes considerably more data by both race and sex than was available for previous editions.

Correlating Degree and Workforce Data

There are large differences between the proportions of degrees awarded to women and minorities in any particular field and the proportions of those persons in the work force for that field. This may reflect the later entry of women into a large male working population, field switching, differences in nomenclature between degree fields and job titles, and problems of similar but non-identical population bases outlined above. The lower proportion of women in a working population than their proportion of earned degrees over time also may indicate that proportionally more women than men have left the workforce in that field, either temporarily or permanently. The data also indicate that women are somewhat less likely than men to find employment that is linked with their major field of study, particularly among recent graduates.

Few statistics are available on the workforce participation of women and minorities in the arts, humanities and education. Persons with degrees in those fields may appear in almost any workforce occupation, and are generally classed in the degree field only when they are in the academic workforce.

This book incorporates both historical and current data so that progress may be measured and changing trend lines incorporated in manpower planning for the future. In some cases, we have included older data because nothing more current was available. However, because so much new information is included, this edition has omitted tables from previous editions which could not be updated.

Through the wording of table titles and the use of footnotes, we have tried to provide as much information as possible regarding the inclusiveness of the data in each table. Usually a more comprehensive explanation of methodology can be found in the original data source, which is listed in the Bibliography. **Because of space limitations, we have used a few conventions to designate which fields are included or excluded in a combined set. Most importantly in the science area, S/E means all science and engineering, NS/E means natural sciences and engineering, excluding the social and behavioral sciences.**

Terminology for Minority Groups

A common set of designations for minority populations is recent. In this book, tables generally use the terminology of the original source from which the table was derived. When possible, the "Hispanic" population is separated into its several component groups. Footnotes generally indicate if Hispanics also are included in black and white population counts.

AFFIRMATIVE ACTION

Federal laws and regulations prohibit discrimination in conditions of employment including recruitment, hiring, lay-off, discharge and recall, and in-service training; opportunities for promotion; participation in training programs; wages and salaries; sick leave time and pay; vacation time and pay; over-time work and pay; medical, hospital, life and accident insurance; and optional and compulsory retirement. Effective in 1992, new federal regulations additionally require reasonable accommodation for Americans with disabilities, both in education and employment.

Statutes and Orders Requiring Equal Employment Opportunity and Affirmative Action

The Equal Pay Act of 1963, the first sex discrimination legislation enacted, requires equal pay for equal work regardless of sex. Title IX of the Education Act Amendments of 1972 extends the coverage to executive, administrative and professional employees in programs receiving federal funds.

Executive Order 11246 as amended by Executive Orders 11357 and 12086 prohibits discrimination in employment by all employers who hold federal contracts, and requires affirmative action programs by all federal contractors and sub-contractors. Firms with contracts over $100,000 and with 100 or more employees must develop and implement written programs of affirmative action.

Title VI of the Civil Rights Act of 1964 forbids discrimination against students on the basis of race, color or national origin in all federally assisted programs. Title VII. as amended by the Equal Employment Opportunity Act of 1972 forbids discrimination on the basis of race, color, national origin, religion or sex in any term, condition or privilege of employment, including sexual harassment, by unions, employment agencies and employers. The law was amended on March 24 1972 to cover all public and private educational institutions as well as state and local governments. It applies to all employers, public or private, whether or not they receive federal funds.

Title IX of the Education Amendments of 1972 forbids discrimination on the basis of sex in all federally assisted education programs in all institutions, public and private, that receive federal monies through grants, loans or contracts. The Supreme Court determined in the spring of 1982 that Title IX's prohibition of sex discrimination applies to both students and employees of educational institutions. The Civil Rights Act of 1991 extends to women the right to seek monetary damages in cases of intentional discrimination, up to capped levels.

The Civil Rights Restoration Act, passed over President Reagan's veto on March 22 1988, extended coverage of the four federal civil rights statutes: Title IX of the Education Amendments of 1972, Title VI of the 1964 Civil Rights Act, Section 504 of the Rehabilitation Act of 1973, and the Age Discrimination Act of 1975. The 1991 Civil Rights Act reversed or modified six recent Supreme Court rulings that made it more difficult for women and members of minority groups to win job discrimination suits. It returned the burden of proof to the employer, and allows women, religious minorities, and the disabled to seek monetary damages for intentional discrimination, with a cap on damages. No cap exists for awards resulting from discrimination against racial and ethnic minorities.

Section 504 of the Vocational Rehabilitation Act of 1973, which bars discrimination against handicapped persons by federal contractors, and requires them to take affirmative action to hire such persons, is supplemented by the Americans with Disabilities Act, effective in January 1992, which requires that new and renovated buildings be made accessible to persons in wheel chairs as well as to those with vision and hearing disabilities. It requires "reasonable accommodation" for employees with disabilities.

Regulation and Enforcement

As of 1978, the Equal Employment Opportunity Commission became the principal agency responsible for enforcement of all public and private non-federal employers and unions and within the federal government, including enforcement of the Equal Pay Act and the Age Discrimination Act.

Enforcement of Executive Order 11246 as amended remains with the Office of Federal Contract Compliance Programs (OFCCP) of the Department of Labor. All federal contractors deal with OFCCP.

The Justice Department is responsible for litigation against state and local governments under Title VII, and represents the government in suits against federal contractors. The Attorney General may initiate "pattern and practice" suits under Title VII in the public sector.

The Department of Education enforces compliance with Title IX. In 1991, DoE ruled that scholarships restricted to minority students were illegal, unless required as a remedy for past discrimination, created by Congress, or funded by a private donor. The DoE rules also prohibit colleges and universities from soliciting funds for minority awards. A federal appeals court (4th Circuit) has ruled that past discrimination by a state does not necessarily justify minority scholarships in states that once operated racially segregated higher education systems.

What is Affirmative Action?

Broadly speaking, affirmative action consists of actions to end discrimination and to remedy the effects of past discrimination. It includes such activities as notifying women's and minority groups about job openings, advertising job openings rather than relying on word-of-mouth notification, developing recruitment procedures aimed at women and minorities as well as other qualified applicants, and providing equal opportunities for advancement. Under Executive Order 11246, an Affirmative Action Plan must be prepared, which includes numerical goals and time tables for increasing the participation of women and/or minorities.

Goals are targets for the inclusion of people previously excluded, and are an attempt to estimate the

composition of the employer's workforce if there were no illegal discrimination based on race or sex. In general, goals for professional positions are aligned with the number or percentage of qualified women or minorities available rather than with their general representation within the population.

Quotas, on the other hand, are illegal unless assigned by a court as the result of a finding of discrimination, since they are in themselves discriminatory and act to keep some qualified people out of the applicant pool to be considered.

Under the Executive Order, all job classifications must be reviewed in order to identify under-utilization of women or minorities. Data should be provided simultaneously on race and sex. If current recruitment practices have resulted in a "significantly lower representation" of women and minorities in the applicant pool than would be expected from their availability in the labor force, then new sources of recruitment must be developed. An employer is assumed to be utilizing "reasonable" numbers of persons in protected classes if his workforce includes at least 80 percent of their representation within the eligible populations.

Affirmative action plans are required to include a system of accountability and monitoring. This system may be centralized in an institution-wide or a corporation-wide office which maintains records and monitors individual units or departments and makes an annual report; or in individual units or departments which may maintain records separately of all applicants and hires as well as records of the efforts made to recruit women and minorities. In either case, records should allow for an ongoing analysis of all employment decisions in recruiting, hiring, promoting and setting salaries.

The employer sets the criteria for every job, in terms of the level of academic preparation required, experience and other factors. The criteria must be applied equally to men and women and to those of all ethnic backgrounds. They must be clearly related to the job to be filled, and they must not in themselves be discriminatory.

The Uniform Guidelines on Employee Selection Procedures protect the rights of workers to be hired and promoted on the basis of job-related standards and without regard to race, sex or national origin. These guidelines apply to all employers, public and private, including academic institutions. Their underlying principle is that tests and other selection procedures that have an adverse impact on minorities and women are illegal unless validated by showing a clear relation between performance on the test and performance on the job. The guidelines adopt a "rule of thumb" as a practical but not absolute means of determining whether there has been an adverse impact. Generally, a selection rate for any race, sex or ethnic group which is less than 80% of the rate for the group with the highest selection rate may be regarded as adverse impact. For professional positions in which women or minorities represent less than 20% of the available pool, statistical evidence of such proportions will be necessary.

No evidence of the validity of a selection procedure is required if there is no adverse impact. The guidelines provide that, in considering whether to take enforcement action, the government will take into account the general posture of the employer regarding equal employment opportunity, including its affirmative action plan and the results achieved under the plan.

Numerical goals have been upheld in the courts as relief for a substantiated pattern of discrimination. Each goal is tailor-made to a specific situation, taking into account expected turnover, vacancies, promotions and the availability of qualified women and minorities. The goal varies for different job classifications and may be general as for "chemists" or more specific as for "doctoral organic chemists."

If an institution fails to meet its goals, and if adverse impact on women or minorities is indicated by its results, that institution must show that it has made a good faith effort to recruit, hire and promote qualified women and minorities, and it must be able to produce records to document those efforts.

If the best qualified person is white and male, that person can be hired. However, if called upon to do so, the employer must be able to demonstrate that a genuine good faith effort has been made to recruit qualified women and minorities; that objective, job-related criteria were specified before the hiring process; and that these criteria have been applied equally to women, minorities and white men.

SOURCE: National Center for Health Statistics, personal communications and Monthly Vital Statistics Report vol. 38, no. 3, Suplement, June 29, 1989

TABLE 1-1

LIVE BIRTHS IN THE U.S. BY SEX AND RACE: 1937 – 1990

Year	Total	Yearly Change No.	Yearly Change %	Male	Female	Year	Total	Yearly Change No.	Yearly Change %	Male	Female	White No.	White %	Black No.	Black %
1933	2,081,232	0	0	1,068,871	1,012,361	1960	4,257,850	13,054	0.31	2,179,708	2,078,142	3,600,744	84.57	602,264	14.14
1934	2,167,636	86,404	4.15	1,112,703	1,054,933	1961	4,268,326	10,476	0.25	2,186,274	2,082,052	3,600,864	84.36	611,072	14.32
1935	2,155,105	−12,531	−0.58	1,105,489	1,049,616	1962	4,167,362	−100,964	−2.37	2,132,466	2,034,896	3,394,068	81.44	584,610	14.03
1936	2,144,790	−10,315	−0.48	1,099,465	1,045,325	1963	4,098,020	−69,342	−1.66	2,101,632	1,996,388	3,326,344	81.17	580,658	14.17
1937	2,203,337	58,547	2.73	1,130,641	1,072,696	1964	4,027,490	−70,530	−1.72	2,060,162	1,967,328	3,369,160	83.65	607,556	15.09
1938	2,286,962	83,625	3.80	1,172,541	1,114,421	1965	3,760,358	−267,132	−6.63	1,927,054	1,833,304	3,123,860	83.07	581,126	15.45
1939	2,265,558	−21,404	−0.94	1,162,600	1,102,958	1966	3,606,274	−154,084	−4.10	1,845,862	1,760,412	2,993,230	83.00	558,244	15.48
1940	2,360,399	94,841	4.19	1,211,684	1,148,715	1967	3,520,959	−85,315	−2.37	1,803,388	1,717,571	2,922,502	83.00	543,976	15.45
1941	2,513,427	153,028	6.48	1,289,734	1,223,693	1968	3,501,564	−19,395	−0.55	1,796,326	1,705,238	2,912,224	83.17	531,152	15.17
1942	2,808,996	295,569	11.76	1,444,365	1,364,631	1969	3,600,206	98,642	2.82	1,846,572	1,753,634	2,993,614	83.15	543,132	15.09
1943	2,936,860	127,864	4.55	1,508,959	1,427,901	1970	3,731,386	131,180	3.64	1,915,378	1,816,008	3,091,264	82.84	572,362	15.34
1944	2,794,800	−142,060	−4.84	1,435,301	1,359,499	1971	3,555,970	−175,416	−4.70	1,822,810	1,733,160	2,919,746	82.11	564,960	15.89
1945	2,735,456	−59,344	−2.12	1,404,587	1,330,869	1972	3,258,411	−297,559	−8.37	1,669,927	1,588,484	2,655,558	81.50	531,329	16.31
1946	3,288,672	553,216	20.22	1,691,220	1,597,452	1973	3,136,965	−121,446	−3.73	1,608,326	1,528,639	2,551,303	81.33	512,597	16.34
1947	3,699,940	411,268	12.51	1,899,876	1,800,064	1974	3,159,958	22,993	0.73	1,622,114	1,537,844	2,575,792	81.51	507,162	16.05
1948	3,535,068	−164,872	−4.46	1,813,852	1,721,216	1975	3,144,198	−15,760	−0.50	1,613,135	1,531,063	2,551,996	81.17	511,581	16.27
1949	3,559,529	24,461	0.69	1,826,352	1,733,177	1976	3,167,788	23,590	0.75	1,624,436	1,543,352	2,567,614	81.05	514,479	16.24
1950	3,554,149	−5,380	−0.15	1,823,555	1,730,594	1977	3,326,632	158,844	5.01	1,705,916	1,620,716	2,691,070	80.89	544,221	16.36
1951	3,750,850	196,701	5.53	1,923,020	1,827,830	1978	3,333,279	6,647	0.20	1,709,394	1,623,885	2,681,116	80.43	551,540	16.55
1952	3,846,986	96,136	2.56	1,971,262	1,875,724	1979	3,494,398	161,119	4.83	1,791,267	1,703,131	2,808,420	80.37	577,855	16.54
1953	3,902,120	55,134	1.43	2,001,798	1,900,322	1980	3,612,258	117,860	3.37	1,852,616	1,759,642	2,898,732	80.25	589,616	16.32
1954	4,017,362	115,242	2.95	2,059,068	1,958,294	1981	3,629,238	16,980	0.47	1,860,272	1,768,966	2,908,669	80.15	586,027	16.15
1955	4,047,295	29,933	0.75	2,073,719	1,973,576	1982	3,680,537	51,299	1.41	1,885,676	1,794,861	2,942,054	79.94	592,641	16.10
1956	4,163,090	115,795	2.86	2,133,588	2,029,502	1983	3,638,933	−41,604	−1.13	1,865,533	1,773,400	2,904,250	79.81	586,027	16.10
1957	4,254,784	91,694	2.20	2,179,960	2,074,824	1984	3,669,141	30,208	0.83	1,879,490	1,789,651	2,923,502	79.68	592,745	16.15
1958	4,203,812	−50,972	−1.20	2,152,546	2,051,266	1985	3,760,561	91,420	2.49	1,927,983	1,832,578	2,991,373	79.55	608,193	16.17
1959	4,244,796	40,984	0.97	2,173,638	2,071,158	1986	3,756,547	−4,014	−0.11	1,924,868	1,831,679	2,970,439	79.07	621,221	16.54
						1987	3,809,394	52,847	1.41	1,951,153	1,858,241	2,992,488	78.56	641,567	16.84
						1988	3,909,510	100,116	2.63	2,002,424	1,907,086	3,046,162	77.92	671,976	17.19
						1989	4,040,958	131,448	3.36	2,069,490	1,971,468	3,192,355	79.00	673,124	16.66
						1990	4,179,000	138,042	3.42	2,136,556	2,035,850	3,336,548	79.89	674,272	16.13

Note: 1990 total is estimated by NCHS. Other 1990 data are linear projections of 1988–1989 trends by CPST.

Source: 1980 and 1990 U.S. Census

TABLE 1-2

RACE/ETHNICITY OF U.S. POPULATION, 1980 AND 1990

	1980		1990		Change	
	No.	%	No.	%	No.	%
Total U.S.	226,546	100.0	248,710	100.0	22,164	9.8
White+	188,372	83.1	199,686	80.3	11,314	6.0
Black+	26,495	11.7	29,986	12.1	3,491	13.2
Hispanic Origin	14,609	6.4	22,354	9.0	7,745	53.0
Mexican	8,740	3.9	13,496	5.4	4,756	54.4
Puerto Rican	2,014	0.9	2,728	1.1	714	35.5
Cuban	803	0.4	1,044	0.4	241	30.0
Other*	3,051	1.3	5,086	2.0	2,035	66.7
Indian/Alaskan Native	1,420	0.6	1,959	0.8	539	38.0
Asian, Pacific Islander	3,500	1.5	7,274	2.9	3,774	107.8
Chinese	806	0.4	1,645	0.7	839	104.1
Filipino	775	0.3	1,407	0.6	632	81.5
Japanese	701	0.3	848	0.3	147	21.0
Vietnamese	262	0.1	615	0.2	353	134.7
Korean	355	0.2	799	0.3	444	125.1
Asian Indian	362	0.2	815	0.3	453	125.1
Hmong	5	0.0	90	0.0	85	1700.0
Thai	45	0.0	91	0.0	46	102.2
Laotian	48	0.0	149	0.1	101	210.4
Cambodian	16	0.0	147	0.1	131	818.8
Hawaiian	167	0.1	211	0.1	44	26.3
Samoan	42	0.0	63	0.0	21	50.0
Guamanian	32	0.0	49	0.0	17	53.1
Other	131	0.1	344	0.1	213	162.6
Other Race#	6,758	3.0	9,805	3.9	3,047	45.1

* Mostly Central and South American populations including Salvadorans, Colombians & Hondurans
\+ Non-Hispanic # Includes Nonresident Aliens

CHART 1-1

MINORITIES AS A % OF U.S POPULATION, 1980 & 1990

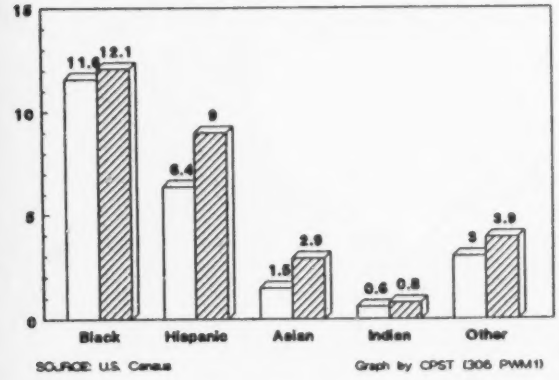
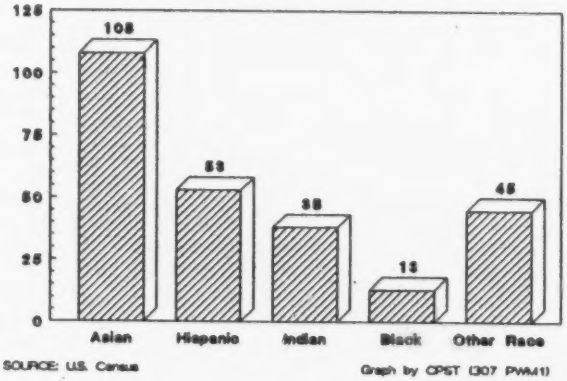


CHART 1-2

PERCENT CHANGE IN U.S. MINORITY GROUPS, 1980 TO 1990



SOURCE: Digest of Education Statistics, 1990, National Center for Education Statistics

TABLE 1-3

ESTIMATES OF RESIDENT POPULATION, BY AGE GROUP: JULY 1960 TO JULY 1988

[In thousands]

Year	Total, All Ages	Total, 3 to 34 Years	3 and 4 Years	5 and 6 Years	7 to 13 Years	14 to 17 Years	18 to 19 Years	20 to 21 Years	22 to 24 Years	25 to 29 Years	30 to 34 Years
1960	179,979	90,722	8,063	7,811	25,155	11,211	4,886	4,443	6,425	10,823	11,905
1961	182,992	92,597	8,207	7,924	25,293	12,046	5,411	4,635	6,587	10,756	11,738
1962	185,771	94,396	8,190	8,108	25,790	12,751	5,617	4,943	6,710	10,740	11,547
1963	188,483	96,275	8,152	8251	26,326	13,492	5,461	5,467	6,930	10,848	11,348
1964	191,141	98,281	8,206	8,233	27,011	14,264	5,429	5,685	7,258	11,051	11,144
1965	193,526	100,210	8,190	8,190	27,563	14,146	6,450	5,503	7,902	11,226	11,040
1966	195,576	101,993	8,031	8,251	28,032	14,398	7,183	5,417	8,198	11,521	10,962
1967	197,247	103,635	7,888	8,237	28,392	14,727	6,928	6,289	8,278	11,943	10,953
1968	199,399	105,363	7,645	8,074	28,732	15,170	6,988	6,972	8,082	12,624	11,076
1969	201,385	106,931	7,253	7,930	28,907	15,549	7,119	6,787	8,980	13,119	11,287
1970	203,984	108,653	6,962	7,703	28,969	15,921	7,410	6,850	9,728	13,604	11,505
1971	206,827	110,482	6,805	7,344	28,892	16,326	7,644	7,106	10,596	13,927	11,842
1972	209,284	112,287	6,789	7,051	28,628	16,637	7,854	7,447	10,418	15,142	12,321
1973	211,357	113,954	6,938	6,888	28,159	16,864	8,044	7,658	10,615	15,694	13,094
1974	213,342	115,641	7,117	6,864	27,599	17,033	8,196	7,893	10,864	16,428	13,644
1975	215,465	117,006	6912	7,014	26,904	17,125	8,418	8,089	11,228	17,183	14,131
1976	217,563	118,073	6,437	7,194	26,321	17,117	8,604	8,240	11,554	18,177	14,428
1977	219,760	118,853	6,190	6,978	25,878	17,042	8,613	8,456	11,856	18,180	15,661
1978	222,095	119,414	6,208	6,499	25,593	16,944	8,617	8,628	12,120	18,585	16,218
1979	224,567	120,126	6,252	6,256	25,174	16,610	8,698	8,653	12,443	19,077	16,961
1980	227,255	121,148	6,369	6,293	24,803	16,140	8,713	8,664	12,716	19,697	17,754
1981	229,637	122,057	6,551	6,327	24,428	15,598	8,553	8,723	12,892	20,200	18,786
1982	231,996	121,917	6,689	6,429	24,184	15,041	8,425	8,700	12,887	20,753	18,808
1983	234,284	122,160	6,924	6,606	23,803	14,720	8,204	8,551	12,938	21,202	19,211
1984	236,477	122,426	7,108	6,742	23,495	15,704	7,818	8,424	12,903	21,535	19,696
1985	238,736	122,714	7,212	6,976	23,135	14,865	7,500	8,086	12,814	21,758	20,269
1986	241,107	122,934	7,275	7,160	23,190	14,797	7,322	7,808	12,603	22,005	20,773
1987	243,419	122,937	7,228	7,263	23,560	14,467	7,315	7,491	12,300	21,979	21,333
1988	245,807	123,009	7,282	7,331	24,075	13,982	7,480	7,319	11,865	21,877	21,796

Notes: Data source: Department of Commerce, Bureau of the Census, Current Population Reports, Series P–25, Nos 591, 917, 1000, 1022 and 1045
Because of rounding, details may not add to totals.

SOURCE: U.S. Bureau of the Census, National Center for Educaton Statistics, Commission on Professionals in Science and Technology

TABLE 1-4

PERCENTAGE OF WOMEN AND U.S. MINORITIES IN VARIOUS POPULATION GROUPS

	Women	White*	Black	Hispanic	Asian	Indian	Foreign
U.S. Population (1990)	51.8	71.3	12.1	9.0	2.9	0.8	
Age 9–22	50.6	67.8	15.5	12.0	3.8	0.9	
Elementary/Secondary Enrollment (1986)	50.0	70.3	16.1	9.9	2.8	0.9	
High School Graduates (1987)	51.7	77.1	12.3	6.6	3.2	0.8	
Undergraduate Enrollment (1989)	52.2	78.7	9.2	5.6	3.9	0.8	1.8
Graduate Enrollment (1989)	52.2	78.4	5.2	2.6	3.1	0.4	10.3
First Prof. Enrollment (1989)	36.6	84.3	4.8	3.4	5.2	0.4	1.9
Total Enrollment (1988)	54.0	78.8	8.7	5.2	3.8	0.7	2.8
Bachelors Degrees (1989)	52.5	84.5	5.7	2.9	3.8	0.4	2.7
S/E Bachelors Degrees (1989)	40.0	81.7	5.3	3.1	5.7	0.4	3.8
Masters Degrees (1989)	51.9	78.1	4.6	2.4	3.5	0.4	11.0
S/E Masters Degrees (1989)	31.8	65.9	2.5	2.1	6.2	0.3	23.0
PhD Degrees (1990)	36.2	65.1	2.7	2.3	3.5	0.3	26.1
S/E PhD Degrees (1990)	28.9	52.7	1.6	2.0	4.2	0.2	39.3

*Non–Hispanic

Source: WICHE, The Road to College

TABLE 1-5

MINORITIES AS A PERCENT OF POPULATION GROUPS, FALL 1988

	1988 High School Graduates	Fall 1988 First–Time Freshmen		Fall 1988 Undergraduates		1990 Population
		Four–Year	Two–Year	Four–Year	Two–Year	18 to 24 Years
Afro–American	13.0%	10.3%	9.8%	8.7%	9.5%	15.4%
Native American	0.7	0.6	1.1	0.5	1.1	0.9
Asian/Pac. Isl.	3.0	3.8	3.5	3.6	4.1	3.4
Latino	6.1	4.0	8.1	3.8	7.9	12.3
White, Non–Latino	77.2	79.6	76.1	88.1	76.2	71.5

Source: NCES in Chronical of Higher Education, March 18, 1992

TABLE 1-6

MINORITIES AS A PERCENT OF COLLEGE ENROLLMENT, FALL 1990

	2–Year	4–Year	Under–graduate	Graduate	Profess–ional	All
Black–American	9.8	8.4	9.5	5.3	5.8	8.9
Native–American	1.0	0.6	0.8	0.4	0.4	0.8
Asian–American	4.1	4.0	4.1	3.3	6.6	4.0
Hispanic–American	8.0	4.0	5.9	2.9	3.7	5.5
White, Non–Hispanic	75.6	79.2	77.8	77.6	81.0	77.9
Foreign	1.4	3.8	1.9	10.5	1.8	2.9

SOURCE: Digest of Education Statistics, 1990, National Center for Education Statistics

TABLE 1-7

ESTIMATES OF SCHOOL AGE[1] RESIDENT POPULATION, BY RACE AND SEX: JULY 1960 TO JULY 1988

[in thousands]

Year	Total			White[2]			Black[2]			Other Races[2]		
	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women
1960	44,176	22,437	21,739	38,366	19,532	18,832	5,366	2,677	2,690	446	228	217
1961	45,263	22,995	22,269	39,220	19,975	19,246	5,575	2,782	2,792	469	238	232
1962	46,648	23,706	22,941	40,352	20,560	19,791	5,802	2,897	2,906	496	251	244
1963	48,070	24,438	23,633	41,524	21,164	20,361	6,025	3,009	3,016	520	264	257
1964	49,509	25,174	24,336	42,692	21,765	20,929	6,272	3,135	3,137	545	275	270
1965	49,900	25,377	24,522	42,891	21,872	21,019	6,440	3,220	3,221	567	285	281
1966	50,681	25,784	24,898	43,469	22,176	21,293	6,619	3,308	3,311	594	300	295
1967	51,357	26,135	25,224	43,969	22,438	21,529	6,768	3,383	3,384	622	314	310
1968	51,974	26,456	25,517	44,422	22,677	21,744	6,903	3,453	3,450	649	325	323
1969	52,386	26,675	25,711	44,697	22,826	21,871	7,016	3,511	3,505	673	338	336
1970	52,593	26,783	25,801	44,783	22,877	21,906	7,108	3,561	3,547	703	355	349
1971	52,562	26,780	25,782	44,644	22,809	21,834	7,182	3,600	3,583	737	371	365
1972	52,316	26,658	25,658	44,336	22,655	21,681	7,211	3,615	3,596	768	388	380
1973	51,910	26,456	25,455	43,898	22,434	21,464	7,213	3,617	3,596	799	405	394
1974	51,498	26,249	25,249	43,454	22,210	21,244	7,213	3,618	3,596	830	420	409
1975	51,044	26,022	25,022	42,950	21,956	20,994	7,199	3,611	3,588	895	456	440
1976	50,633	25,822	24,811	42,477	21,721	20,755	7,208	3,617	3,591	948	483	465
1977	49,897	25,456	24,441	41,737	21,350	20,386	7,167	3,600	3,568	994	506	487
1978	49,038	24,024	24,013	40,883	20,919	19,964	7,116	3,576	3,540	1,039	530	509
1979	48,041	24,525	23,517	39,911	20,427	19,484	7,037	3,538	3,498	1,094	560	536
1980	47,235	24,138	26,098	39,001	19,981	19,021	6,996	3,524	3,473	1,238	633	605
1981	46,353	23,695	22,658	38,118	19,532	18,586	6,924	3,491	3,433	1,309	671	638
1982	45,655	23,347	22,308	37,400	19,169	18,232	6,879	3,473	3,406	1,374	706	669
1983	45,130	23,089	22,041	36,859	18,899	17,960	6,841	3,457	3,385	1,430	733	697
1984	44,942	23,000	21,942	36,597	18,770	17,827	6,848	3,463	3,384	1,498	767	731
1985	44,975	23,026	21,949	36,503	18,727	17,776	6,898	3,492	3,405	1,575	806	769
1986	45,148	23,120	22,028	36,531	18,746	17,786	6,957	3,527	3,430	1,660	848	812
1987	45,291	23,198	22,093	36,530	18,747	17,781	7,023	3,564	3,460	1,740	887	852
1988	45,388	23,253	22,135	36,475	18,722	17,752	7,091	3,601	3,490	1,823	929	894

Notes: Data source: Department of Commerce, Bureau of the Census, Current Population Reports, Series P–25, Nos 591, 917, 1000, 1022 and 1045

Because of rounding, details may not add to totals. (1) Includes persons 5 to 17 years of age. (2) Includes persons of Hispanic origin.

SOURCE: Digest of Education Statistics, 1990, National Center for Education Statistics

TABLE 1-8

PERCENTAGE OF THE POPULATION 3 TO 34 YEARS OLD ENROLLED IN SCHOOL BY RACE/ETHNICITY, SEX AND AGE OCTOBER 1975 AND OCTOBER 1989

Year and Age	Total				Men				Women			
	All Races	White	Black	Hispanic Origin	All Races	White	Black	Hispanic Origin	All Races	White	Black	Hispanic Origin
1975												
Total, 3 to 34 years	**53.7**	**53.1**	**57.8**	**54.8**	**56.1**	**55.4**	**60.5**	**58.1**	**51.5**	**50.8**	**55.3**	**51.7**
3 and 4 years	31.5	30.8	34.2	27.3	30.9	30.8	31.1	26.7	32.1	30.7	37.3	27.9
5 and 6 years	94.7	94.8	94.4	92.1	94.4	94.4	94.9	89.7	95.1	95.3	94.0	94.4
7 to 9 years	99.3	99.4	99.3	99.6	99.2	99.2	99.4	99.6	99.5	99.5	99.2	99.5
10 to 13 years	99.3	99.3	99.1	99.2	98.9	99.0	98.9	98.8	99.6	99.6	99.3	99.7
14 and 15 years	98.2	98.3	97.4	95.6	98.4	98.5	97.6	97.4	98.0	98.1	97.2	93.8
16 and 17 years	89.0	89.3	86.9	86.2	90.7	91.0	88.2	88.3	87.2	87.5	85.6	84.0
18 and 19 years	46.9	46.5	47.1	44.0	49.9	49.6	49.9	51.9	44.2	43.5	44.7	37.1
20 and 21 years	31.2	31.8	27.1	27.5	35.3	36.3	28.7	31.3	27.4	27.5	25.8	24.3
22 to 24 years	16.2	16.3	14.2	14.1	20.0	20.5	14.7	15.9	12.6	12.2	13.8	12.5
25 to 29 years	10.1	10.0	9.4	8.3	13.1	13.1	11.8	11.9	7.2	7.0	7.5	5.3
30 to 34 years	6.6	6.6	7.1	5.5	7.7	7.5	8.6	7.2	5.6	5.7	5.9	4.1
1989												
Total, 3 to 34 years	**49.0**	**48.4**	**51.5**	**45.7**	**49.7**	**48.9**	**52.8**	**45.5**	**48.4**	**47.9**	**50.3**	**45.9**
3 and 4 years	39.1	39.5	38.7	22.3	38.8	38.9	39.5	19.3	39.5	40.2	37.8	25.5
5 and 6 years	95.2	95.3	94.7	93.3	95.1	95.4	93.0	92.8	95.2	95.2	96.4	93.7
7 to 9 years	99.2	99.2	99.0	98.1	99.2	99.3	98.8	97.5	99.2	99.1	99.2	98.7
10 to 13 years	99.4	99.4	99.4	99.1	99.2	99.2	98.8	98.6	99.6	99.6	99.9	99.6
14 and 15 years	98.8	98.7	99.4	96.4	99.2	99.3	99.3	98.0	98.4	98.1	99.5	95.0
16 and 17 years	92.7	92.3	93.7	86.4	93.2	92.6	95.6	88.7	92.2	92.1	91.7	83.7
18 and 19 years	56.0	56.4	50.2	44.6	56.6	57.2	51.0	44.2	55.4	55.6	49.4	45.0
20 and 21 years	38.5	39.5	30.7	18.8	37.3	39.3	23.1	17.1	39.7	39.7	37.3	20.8
22 to 24 years	19.9	20.0	17.2	12.0	20.4	20.4	15.5	12.2	19.5	19.6	18.6	11.9
25 to 29 years	9.3	9.4	6.4	6.6	9.3	9.3	5.5	7.3	9.3	9.6	7.1	5.8
30 to 34 years	5.7	5.6	4.9	3.8	5.0	5.0	3.2	4.1	6.4	6.2	6.3	3.5
Change 1975 – 1989												
Total, 3 to 34 years	**−4.7**	**−4.7**	**−6.3**	**−9.1**	**−6.4**	**−6.5**	**−7.7**	**−12.6**	**−3.1**	**−2.9**	**−5.0**	**−5.8**
3 and 4 years	7.6	8.7	4.5	−5.0	7.9	8.1	8.4	−7.4	7.4	9.5	0.5	−2.4
5 and 6 years	0.5	0.5	0.3	1.2	0.7	1.0	−1.9	3.1	0.1	−0.1	2.4	−0.7
7 to 9 years	−0.1	−0.2	−0.3	−1.5	0.0	0.1	−0.6	−2.1	−0.3	−0.4	0.0	−0.8
10 to 13 years	0.1	0.1	0.3	−0.1	0.3	0.2	−0.1	−0.2	0.0	0.0	0.6	−0.1
14 and 15 years	0.6	0.4	2.0	0.8	0.8	0.8	1.7	0.6	0.4	0.0	2.3	1.2
16 and 17 years	3.7	3.0	6.8	0.2	2.5	1.6	7.4	0.4	5.0	4.6	6.1	−0.3
18 and 19 years	9.1	9.9	3.1	0.6	6.7	7.6	1.1	−7.7	11.2	12.1	4.7	7.9
20 and 21 years	7.3	7.7	3.6	−8.7	2.0	3.0	−5.6	−14.2	12.3	12.2	11.5	−3.5
22 to 24 years	3.7	3.7	3.0	−2.1	0.4	−0.1	0.8	−3.7	6.9	7.4	4.8	−0.6
25 to 29 years	−0.8	−0.6	−3.0	−1.7	−3.8	−3.8	−6.3	−4.6	2.1	2.6	−0.4	0.5
30 to 34 years	−0.9	−1.0	−2.2	−1.7	−2.7	−2.5	−5.4	−3.1	0.8	0.5	0.4	−0.6

Note: White and Black races include Hispanics who may be of any race.

SOURCE: Digest of Education Statistics, 1990, National Center for Education Statistics

TABLE 1-9

PERCENT OF HIGH SCHOOL DROPOUTS AMONG PERSONS 14 TO 34 YEARS OLD, BY AGE, RACE/ETHNICITY AND SEX, OCTOBER 1970 AND OCTOBER 1989

Year, Race/Ethnicity And Sex	Total, 14 to 35 Years	14 and 15 Years	16 and 17 Years	18 and 19 Years	20 and 21 Years	22 to 24 Years	25 to 29 Years	30 to 34 Years
October 1970								
All races	17.0	1.8	8.0	16.2	16.6	18.7	22.5	26.5
Male	16.2	1.7	7.1	16.0	16.1	17.9	21.4	26.2
Female	17.7	1.9	8.9	16.3	16.9	19.4	23.6	26.8
White	15.2	15.2	1.7	7.3	14.1	14.6	16.3	19.9
Male	14.4	1.7	6.3	13.3	14.1	15.3	19.0	24.2
Female	16.0	1.8	8.4	14.8	15.1	17.2	20.7	24.9
Black	30.0	30.0	2.4	12.8	31.2	29.6	37.8	44.4
Male	30.4	2.0	13.3	36.4	29.6	39.5	43.1	45.9
Female	29.5	2.8	12.4	26.6	29.6	36.4	45.6	41.5
October 1989								
All races	12.2	1.5	6.0	14.3	15.8	13.6	13.2	13.1
Male	12.9	1.1	5.9	14.6	18.1	15.1	13.9	13.6
Female	11.5	2.1	5.8	13.5	14.1	12.4	12.6	12.7
White	12.0	12.0	1.7	6.1	13.6	15.6	13.4	12.6
Male	12.8	0.9	6.4	14.4	17.1	14.9	13.8	13.0
Female	11.1	2.4	5.7	12.8	14.2	12.0	11.5	11.6
Black	13.9	15.3	0.4	5.6	18.0	16.8	14.9	17.3
Male	14.1	0.0	4.1	17.5	23.3	16.1	14.8	19.3
Female	13.7	0.9	7.1	18.5	11.1	14.0	19.3	18.3
Hispanic Origin	34.9	35.4	7.2	12.5	27.9	41.2	41.1	40.1
Male	35.8	4.3	9.6	25.9	45.8	44.8	41.9	41.0
Female	34.1	9.7	15.7	30.0	35.9	37.3	38.3	39.4
Change 1970 – 1989								
All races	−4.8	−0.3	−2.0	−1.9	−0.8	−5.1	−9.3	−13.4
Male	−3.3	−0.6	−1.2	−1.4	2.0	−2.8	−7.5	−12.6
Female	−6.2	0.2	−3.1	−2.8	−2.8	−7.0	−11.0	−14.1
White	−3.2	−3.2	0.0	−1.2	−0.5	1.0	−2.9	−7.3
Male	−1.6	−0.8	0.1	1.1	3.0	−0.4	−5.2	−11.2
Female	−4.9	0.6	−2.7	−2.0	−0.9	−5.2	−9.2	−13.3
Black	−16.1	−14.7	−2.0	−7.2	−13.2	−12.8	−22.9	−27.1
Male	−16.3	−2.0	−9.2	−18.9	−6.3	−23.4	−28.3	−26.6
Female	−15.8	−1.9	−5.3	−8.1	−18.5	−22.4	−26.3	−23.2
Hispanic Origin								
Male								
Female								

Note: White and Black races include Hispanics who may be of any race

Source: The Levels of Mathematical Achievement, Initial Performance Standards for the 1990 NAEP Mathematics Assessment, National Assessment Governing Board

TABLE 1-10

PERCENTAGE OF HIGH SCHOOL STUDENTS AT OR ABOVE ACHIEVEMENT LEVELS IN NAEP MATHEMATICS ASSESSMENT BY GRADE, SEX AND RACE/ETHNICITY, 1990

	Total	Boys	Girls	White	Black	Hispanic	Asian/Pac. Isl	Am. Indian
Grade 4								
Below Basic	36.7	35.3	38.1	26.4	69.7	58.4	22.2	44.4
Basic	63.3	64.7	61.9	73.6	30.3	41.6	77.8	55.6
Proficient	14.9	15.6	14.0	19.0	2.1	5.2	28.5	5.5
Advanced	0.6	0.8	0.4	0.8	0.0	0.1	1.7	0.2
Grade 8								
Below Basic	37.9	38.6	37.2	28.3	70.4	59.8	17.8	58.4
Basic	62.1	61.4	62.8	71.7	29.6	40.2	82.2	41.6
Proficient	18.1	20.0	16.3	22.3	4.2	6.1	38.9	5.1
Advanced	1.0	1.4	0.6	1.2	0.0	0.0	6.4	0.0
Grade 12								
Below Basic	35.6	34.7	36.4	28.2	66.4	57.2	17.2	*
Basic	64.4	65.3	63.6	71.8	33.6	42.8	82.8	*
Proficient	16.2	19.2	13.4	19.2	2.2	6.1	34.0	*
Advanced	2.6	3.6	1.7	3.0	0.1	0.5	8.8	*

* Sample size insufficient to permit reliable estimate.

Source: Trends in Academic Progress: Achievement of American Students in Mathematics, 1973–90 and in Science Proficiency 1970–90 reported in Science and Engineering Indicators, 1991

TABLE 1-11

TRENDS IN MATHEMATICS AND SCIENCE PROFICIENCY

MATHEMATICS							SCIENCE						
	Total	Boys	Girls	White	Black	Hisp.		Total	Boys	Girls	White	Black	Hisp.
Age 9							**Age 9**						
1973		217.7	220.4	224.9	190.0	202.1	1970		227.6	222.7	235.9	178.7	
1978	218.6	217.4	219.9	224.1	192.4	202.9	1973		222.5	218.4	231.1	176.5	
1982	219.0	217.1	220.8	224.0	194.9	204.0	1977	219.9	222.1	217.7	229.6	174.9	191.9
1986	221.7	221.7	221.7	226.9	201.6	205.4	1982	220.9	221.0	220.7	229.1	187.1	189.0
1990	229.6	229.1	230.2	235.2	208.4	213.8	1986	224.3	227.3	221.3	231.9	196.2	199.4
							1990	228.7	230.3	227.1	237.5	196.4	206.2
Age 13							**Age 13**						
1973		265.1	266.9	273.7	227.7	238.8	1970		256.8	253.0	263.4	214.9	
1978	264.1	263.6	264.7	271.6	229.6	238.0	1973		251.7	247.1	258.6	205.3	
1982	268.6	269.2	268.0	274.4	240.4	252.4	1977	247.4	251.1	243.8	256.1	208.1	213.4
1986	269.0	270.0	268.0	273.6	249.2	254.3	1982	250.2	255.7	245.0	257.3	217.2	225.5
1990	270.4	271.2	269.6	276.3	249.1	254.6	1986	251.4	256.1	246.9	259.2	221.6	226.1
							1990	255.2	258.5	251.8	264.1	225.7	231.6
Age 17							**Age 17**						
1973		303.8	300.6	310.1	269.8	277.2	1970		313.8	296.7	311.8	257.8	
1978	300.4	303.8	297.1	305.9	268.4	276.3	1973		304.3	288.3	303.9	250.4	
1982	298.5	301.5	295.6	303.7	271.8	276.7	1977	289.6	297.1	282.3	297.7	240.3	262.3
1986	302.0	304.7	299.4	307.5	278.6	283.1	1982	283.3	291.9	275.2	293.2	234.8	248.7
1990	304.6	306.3	302.9	309.5	288.5	283.5	1986	288.5	294.9	282.3	297.5	252.8	259.3
							1990	290.4	295.6	285.4	300.9	253.0	261.5

Source: The Road to College; Western Interstate Commission for Higher Education and The College Board, July 1991

TABLE 1-12

HIGH SCHOOL GRADUATES BY RACE/ETHNICITY 1985–86 TO 1989–90 (ACTUAL), 1990–91 TO 1994–95 (PROJECTED)

Year	Total	African–American	%	Amer. Indian Alaskan Native	%	Asian/ Pacific Islander	%	Latino	%	White non–Latino	%
1985–86	2,391,380	316,350	13.2	16,750	0.7	62,090	2.6	140,040	5.9	1,856,150	77.6
1986–87	2,425,640	315,240	13.0	16,820	0.7	66,990	2.8	145,830	6.0	1,880,760	77.5
1987–88	2,505,070	325,820	13.0	17,340	0.7	74,540	3.0	152,800	6.1	1,934,570	77.2
1988–89	2,466,540	326,690	13.2	18,010	0.7	77,680	3.1	161,960	6.6	1,882,200	76.3
1989–90	2,308,770	311,150	13.5	17,110	0.7	80,950	3.5	166,750	7.2	1,732,810	75.1
1990–91	2,206,692	289,950	13.1	17,080	0.8	84,020	3.8	172,912	7.8	1,642,730	74.4
1991–92	2,196,950	291,460	13.3	17,260	0.8	86,840	4.0	183,740	8.4	1,617,650	73.6
1992–93	2,228,100	299,520	13.4	17,400	0.8	90,960	4.1	197,560	8.9	1,622,660	72.8
1993–94	2,218,300	295,780	13.3	17,540	0.8	94,890	4.3	203,540	9.2	1,606,550	72.4
1994–95	2,307,540	308,120	13.4	18,660	0.8	98,090	4.3	213,290	9.2	1,669,380	72.3

SOURCE: The Mathematics Report Card and The Science Report Card, Educational Testing Service, June 1988 and Science and Engineering Indicators, National Science Board, 1991

TABLE 1-13

WEIGHTED PERCENTAGE OF U.S. 17 YEAR OLDS WITH PROFICIENCY AT OR ABOVE SET LEVELS –

IN MATHEMATICS

	Beginning Skills and Understanding				Basic Operations and Beginning Problem Solving				Moderately Complex Procedures and Reasoning				Multi–step Problem Solving and Algebra			
Score Level*	200				250				300				350			
Year	1978	1982	1986	1990	1978	1982	1986	1990	1978	1982	1986	1990	1978	1982	1986	1990
Total	100	100	100	100	92	93	96	96	52	49	52	56	7	6	7	7
Sex																
Male	100	100	100		93	94	97		55	52	54		10	7	8	
Female	100	100	100		91	92	96		48	45	48		6	4	5	
Ethnicity/Race																
White	100	100	100	100	96	96	98	98	58	55	58	63	9	6	8	8
Black	99	100	100	100	71	75	86	92	17	17	22	33	1	1	0	2
Hispanic	99	100	99	100	78	81	91	86	23	21	27	30	1	1	1	2

IN SCIENCE

	Beginning Skills and Understanding				Applies Basic Scientific Information				Analyzes Scientific Procedures and Data				Integrates Specialized Scientific Information			
Score Level*	200				250				300				350			
Year	1978	1982	1986	1990	1978	1982	1986	1990	1978	1982	1986	1990	1978	1982	1986	1990
Total	97	96	97	97	82	77	81	81	42	37	41	43	9	7	8	9
Sex																
Male	98	97	97		85	82	83		49	46	49		12	11	10	
Female	97	95	97		78	72	79		34	30	34		5	4	5	
Ethnicity/Race																
White	99	99	99	99	88	85	88	90	48	44	49	51	10	9	9	11
Black	85	81	90	88	41	37	53	51	8	7	12	16	0	0	1	2
Hispanic	93	86	93	92	62	47	62	60	19	13	16	21	2	1	1	2

* Score at or above given number. Note: Sex data for 1990 were not available.

SOURCE: *Digest of Education Statistics 1990,* U.S. Department of Education

TABLE 1-14

HIGH SCHOOL GRADUATES COMPARED WITH POPULATION AGE 17
[in thousands]

School year	Population 17 years old [1]	High school graduates					Graduates as a percent of 17-year-old population
		Total [2]	Sex		Control		
			Male	Female	Public [3]	Private [4]	
1	2	3	4	5	6	7	8
1869–70	815	16	7	9	—	—	2.0
1879–80	946	24	11	13	—	—	2.5
1889–90	1,259	44	19	25	22	22	3.5
1899–1900	1,489	95	38	57	62	33	6.4
1909–10	1,786	156	64	93	111	45	8.8
1919–20	1,855	311	124	188	231	80	16.8
1929–30	2,296	667	300	367	592	75	29.0
1939–40	2,403	1,221	579	643	1,143	78	50.8
1947–48	2,261	1,190	563	627	1,073	117	52.6
1949–50	2,034	1,200	571	629	1,063	136	59.0
1951–52	2,086	1,197	569	627	1,056	141	57.4
1953–54	2,135	1,276	613	664	1,129	147	59.8
1955–56	2,242	1,415	680	735	1,252	163	63.1
1956–57	2,272	1,434	690	744	1,270	164	63.1
1957–58	2,325	1,506	725	781	1,332	174	64.8
1958–59	2,458	1,627	784	843	1,435	192	66.2
1959–60	2,672	1,858	895	963	1,627	231	69.5
1960–61	2,892	1,964	955	1,009	1,725	239	67.9
1961–62	2,768	1,918	938	980	1,678	240	69.3
1962–63	2,740	1,943	956	987	1,710	233	70.9
1963–64	2,978	2,283	1,120	1,163	2,008	275	76.7
1964–65	3,684	2,658	1,311	1,347	2,360	298	72.1
1965–66	3,489	2,665	1,323	1,342	2,367	298	76.4
1966–67	3,500	2,672	1,328	1,344	2,374	298	76.3
1967–68	3,532	2,695	1,338	1,357	2,395	300	76.3
1968–69	3,659	2,822	1,399	1,423	2,522	300	77.1
1969–70	3,757	2,889	1,430	1,459	2,589	300	76.9
1970–71	3,872	2,937	1,454	1,483	2,637	300	75.9
1971–72	3,973	3,001	1,487	1,514	2,699	302	75.5
1972–73	4,049	3,036	1,500	1,536	2,730	306	75.0
1973–74	4,132	3,073	1,512	1,561	2,763	310	74.4
1974–75	4,256	3,133	1,542	1,591	2,823	310	73.6
1975–76	4,272	3,148	1,552	1,596	2,837	311	73.7
1976–77	4,272	3,155	1,548	1,607	2,840	315	73.9
1977–78	4,286	3,127	1,531	1,596	2,825	302	73.0
1978–79	4,327	3,117	1,523	1,594	2,817	300	72.0
1979–80	4,262	3,043	1,491	1,552	2,748	295	71.4
1980–81	4,207	3,020	1,483	1,537	2,725	295	71.8
1981–82	4,121	2,995	1,471	1,524	2,705	290	72.7
1982–83	3,939	2,888	1,437	1,451	2,598	290	73.3
1983–84	3,753	2,767	—	—	2,495	272	73.7
1984–85	3,658	2,677	—	—	2,414	263	73.2
1985–86 [5]	3,621	2,643	—	—	2,383	260	73.0
1986–87 [5]	3,697	2,694	—	—	2,429	265	72.9
1987–88 [5]	3,781	2,801	—	—	2,500	301	74.1
1988–89 [5]	3,761	2,787	—	—	2,496	291	74.1
1989–90 [6]	—	2,665	—	—	2,399	266	—

[1] Derived from *Current Population Reports,* Series P-25.
[2] Includes graduates of public and private schools.
[3] Data for 1929–30 and preceding years are from *Statistics of Public High Schools* and exclude graduates of high schools which failed to report to the Office of Education.
[4] For most years, private school data have been estimated based on periodic private school surveys. For years through 1957–58, private includes data for subcollegiate departments of institutions of higher education and residential schools for exceptional children.
[5] Data have been revised from previously published figures.
[6] Estimated.
—Data not available.

NOTE.—Includes graduates of regular day school programs. Excludes graduates of other programs, when separately reported, and recipients of high school equivalency certificates. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public High Schools;* Biennial Survey of Education in the United States; *Statistics of State School Systems; Statistics of Nonpublic Elementary and Secondary Schools;* Common Core of Data surveys; and U.S. Department of Commerce, Bureau of the Census, *Current Population Reports,* Series P-25. (This table was prepared July 1990.)

Source: The Road to College: Educational Progress by Race and Ethnicity, 1991, Western Interstate Commission for Higher Education

TABLE 1-15

PROJECTED NUMBER OF HIGH–SCHOOL GRADUATES BY RACIAL AND ETHNIC GROUP, 1995

	Am. Ind.	% AI	Asian	%A	Black	%B	Hispanic	%H	White	%W	Total
Alabama	589	1.5	242	0.6	12,986	32.3	176	0.4	26,211	65.2	40,204
Alaska	1,017	17.2	261	4.4	287	4.9	121	2.1	4,214	71.4	5,900
Arizona	2,416	7.0	702	2.0	1,372	4.0	7,640	22.1	22,463	64.9	34,593
Arkansas	47	0.2	173	0.7	5,863	22.4	111	0.4	20,019	76.4	26,213
California	2,105	0.8	39,696	15.1	17,801	6.8	77,027	29.4	125,507	47.9	262,136
Colorado	244	0.8	836	2.6	1,484	4.7	4,151	13.1	24,915	78.8	31,630
Connecticut	28	0.1	635	2.5	2,691	10.5	1,851	7.2	20,357	79.6	25,562
Delaware	6	0.1	71	1.2	1,374	22.4	101	1.6	4,571	74.7	6,123
District of Columbia	0	0.0	37	1.3	2,571	89.0	212	7.3	70	2.4	2,890
Florida	112	0.1	2,237	2.4	18,324	19.8	13,806	14.9	58,038	62.7	92,517
Georgia	10	0.0	384	0.6	20,670	34.6	237	0.4	38,481	64.4	59,782
Hawaii	35	0.3	8,069	75.3	218	2.0	218	2.0	2,170	20.3	10,710
Idaho	119	0.9	144	1.1	25	0.2	448	3.4	12,535	94.5	13,271
Illinois	119	0.1	3,983	3.8	16,865	16.0	7,932	7.5	76,643	72.6	105,542
Indiana	87	0.2	451	0.8	5,026	8.8	1,040	1.8	50,659	88.5	57,263
Iowa	34	0.1	304	1.0	628	2.0	250	0.8	30,391	96.2	31,607
Kansas	232	0.9	452	1.7	1,905	7.1	1,172	4.4	22,912	85.9	26,673
Kentucky	11	0.0	305	0.8	2,962	8.1	70	0.2	33,402	90.9	36,750
Louisiana	136	0.4	435	1.2	14,828	41.4	371	1.0	20,076	56.0	35,846
Maine	39	0.3	78	0.7	80	0.7	79	0.7	11,662	97.7	11,938
Maryland	59	0.1	1,275	3.1	11,438	27.6	599	1.4	28,019	67.7	41,390
Massachusetts	58	0.1	2,191	4.7	3,313	7.1	3,333	7.1	38,068	81.1	46,963
Michigan	745	0.9	899	1.1	10,807	12.7	1,402	1.7	71,053	83.7	84,906
Minnesota	475	0.9	1,755	3.5	1,127	2.2	809	1.6	46,322	91.7	50,488
Mississippi	34	0.1	87	0.4	12,246	49.4	28	0.1	12,374	50.0	24,769
Missouri	38	0.1	336	0.7	5,601	11.6	255	0.5	42,158	87.1	48,388
Montana	296	3.1	66	0.7	31	0.3	59	0.6	9,062	95.2	9,514
Nebraska	80	0.5	188	1.1	540	3.1	323	1.9	16,257	93.5	17,388
Nevada	161	1.5	438	4.0	852	7.8	636	5.8	8,852	80.9	10,939
New Hampshire	5	0.0	157	1.6	80	0.8	241	2.4	9,642	95.2	10,125
New Jersey	70	0.1	4,152	6.4	9,370	14.3	6,451	9.9	45,293	69.3	65,336
New Mexico	1,423	8.8	266	1.7	346	2.1	6,435	39.9	7,645	47.4	16,115
New York	420	0.3	8,201	6.0	19,948	14.6	12,217	8.9	96,004	70.2	136,790
North Carolina	840	1.4	733	1.2	17,119	28.1	572	0.9	41,644	68.4	60,908
North Dakota	342	4.4	43	0.6	26	0.3	79	1.0	7,213	93.6	7,703
Ohio	48	0.0	599	0.6	12,083	11.2	830	0.8	94,277	87.4	107,837
Oklahoma	3,066	9.8	393	1.3	2,902	9.3	698	2.2	24,272	77.5	31,331
Oregon	438	1.6	888	3.2	547	2.0	1,112	4.1	24,356	89.1	27,341
Pennsylvania	63	0.1	2,037	2.0	9,312	9.1	1,562	1.5	89,855	87.4	102,829
Rhode Island	15	0.2	106	1.4	253	3.4	122	1.7	6,867	93.3	7,363
South Carolina	46	0.1	342	1.0	12,967	38.8	279	0.8	19,746	59.2	33,380
South Dakota	321	3.9	26	0.3	14	0.2	28	0.3	7,782	95.2	8,171
Tennessee	13	0.0	523	1.2	8,218	18.7	145	0.3	35,023	79.7	43,922
Texas	299	0.2	4,683	2.7	23,846	13.7	52,210	30.0	92,736	53.4	173,774
Utah	346	1.2	724	2.5	131	0.5	807	2.8	26,395	92.9	28,403
Vermont	34	0.5	126	1.9	70	1.1	50	0.8	6,212	95.7	6,492
Virginia	65	0.1	2,954	5.0	12,342	20.9	1,225	2.1	42,608	72.0	59,194
Washington	909	1.9	3,307	6.7	1,585	3.2	2,410	4.9	40,800	83.2	49,011
West Virginia	22	0.1	98	0.5	686	3.2	125	0.6	20,182	95.6	21,113
Wisconsin	478	0.9	978	1.8	2,323	4.4	943	1.8	48,188	91.1	52,910
Wyoming	62	1.1	23	0.4	34	0.6	288	5.2	5,181	92.7	5,588
Total	18,657	0.8	98,089	4.3	308,117	13.4	213,286	9.2	1,669,382	72.3	2,307,531

Source: The Road to College: Educational Progress by Race and Ethnicity, 1991, Western Interstate Commission for Higher Education

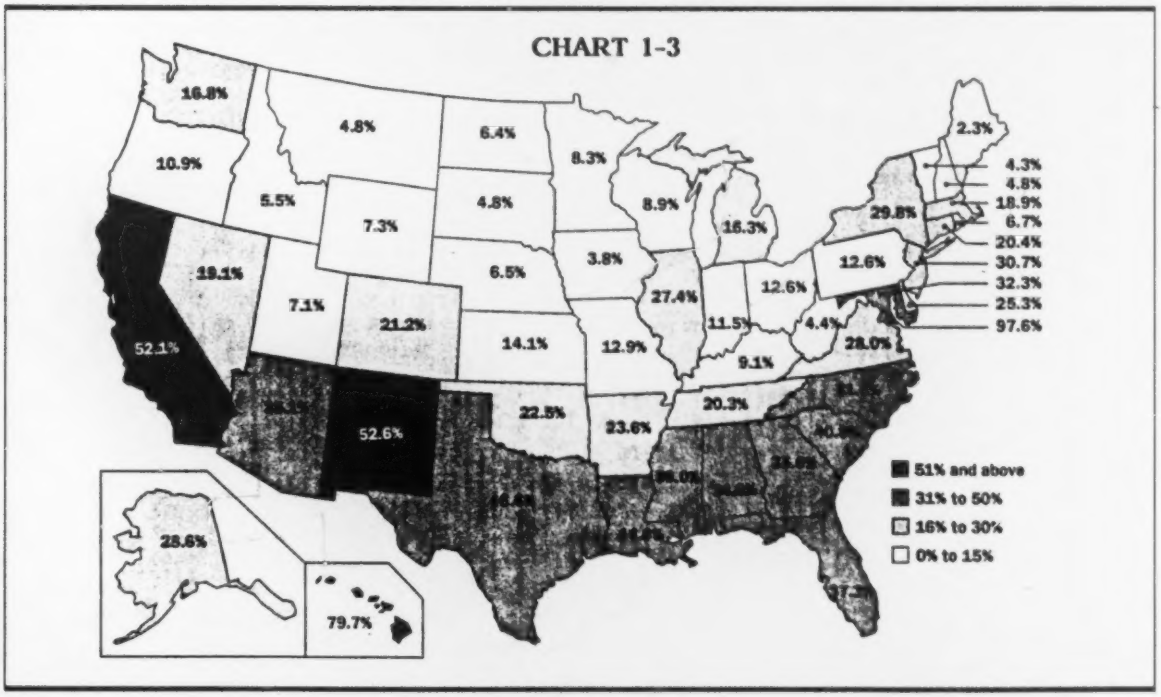
TABLE 1-16

LEADING TWENTY FIVE STATES IN PROJECTED NUMBER OF BLACK, HISPANIC AND ASIAN, HIGH–SCHOOL GRADUATES, 1995

	Black			Asian			Hispanic	
	No.	%		No.	%		No.	%
Texas	23,846	13.7	California	39,696	15.1	California	77,027	29.4
Georgia	20,670	34.6	New York	8,201	6.0	Texas	52,210	30.0
New York	19,948	14.6	Hawaii	8,069	75.3	Florida	13,806	14.9
Florida	18,324	19.8	Texas	4,683	2.7	New York	12,217	8.9
California	17,801	6.8	New Jersey	4,152	6.4	Illinois	7,932	7.5
North Carolina	17,119	28.1	Illinois	3,983	3.8	Arizona	7,640	22.1
Illinois	16,865	16.0	Washington	3,307	6.7	New Jersey	6,451	9.9
Louisiana	14,828	41.4	Virginia	2,954	5.0	New Mexico	6,435	39.9
Alabama	12,986	32.3	Florida	2,237	2.4	Colorado	4,151	13.1
South Carolina	12,967	38.8	Massachusetts	2,191	4.7	Massachusetts	3,333	7.1
Virginia	12,342	20.9	Pennsylvania	2,037	2.0	Washington	2,410	4.9
Mississippi	12,246	49.4	Minnesota	1,755	3.5	Connecticut	1,851	7.2
Ohio	12,083	11.2	Maryland	1,275	3.1	Pennsylvania	1,562	1.5
Maryland	11,438	27.6	Wisconsin	978	1.8	Michigan	1,402	1.7
Michigan	10,807	12.7	Michigan	899	1.1	Virginia	1,225	2.1
New Jersey	9,370	14.3	Oregon	888	3.2	Kansas	1,172	4.4
Pennsylvania	9,312	9.1	Colorado	836	2.6	Oregon	1,112	4.1
Tennessee	8,218	18.7	North Carolina	733	1.2	Indiana	1,040	1.8
Arkansas	5,863	22.4	Utah	724	2.5	Wisconsin	943	1.8
Missouri	5,601	11.6	Arizona	702	2.0	Ohio	830	0.8
Indiana	5,026	8.8	Connecticut	635	2.5	Minnesota	809	1.6
Massachusetts	3,313	7.1	Ohio	599	0.6	Utah	807	2.8
Kentucky	2,962	8.1	Tennessee	523	1.2	Oklahoma	698	2.2
Oklahoma	2,902	9.3	Kansas	452	1.7	Nevada	636	5.8
Connecticut	2,691	10.5	Indiana	451	0.8	Maryland	599	1.4

PROJECTED PERCENT OF MINORITY PUBLIC HIGH SCHOOL GRADUATES IN 1995

CHART 1-3



Source: Learning Science and Mathematics, The International Assessment of Educational Progress, Educational Testing Service, 1992

TABLE 1-17

AVERAGE PERCENTS CORRECT IN SCIENCE OF 13-YEAR-OLD STUDENTS, BY SEX AND COUNTRY, 1991

Country*	Total	Boys	Girls	Difference
Average	66.9			
Korea	77.5	79.6	75.0	4.6
Taiwan	75.6	76.3	74.9	1.4
Switzerland	73.7	76.4	70.9	5.5
Hungary	73.4	75.6	71.4	4.2
Soviet Union	71.3	72.9	69.6	3.3
Slovenia	70.3	72.5	68.2	4.3
Italy	69.9	72.2	67.6	4.6
Israel	69.7	71.6	68.0	3.6
Canada	68.8	70.5	67.1	3.4
England	68.7	70.3	67.1	3.2
France	68.6	70.7	66.5	4.2
Scotland	67.9	69.6	66.3	3.3
Spain	67.5	69.2	66.0	3.2
China	67.2	69.4	64.8	4.6
United States	67.0	69.4	64.5	4.9
Ireland	63.3	66.1	60.8	5.3
Portugal	62.6	65.0	60.3	4.7
Jordan	56.6	57.1	55.9	1.2
Brazil, Sao Paulo	52.7	56.3	49.6	6.7
Brazil, Fortaleza	46.4	49.1	44.3	4.8

*In descending order of total scores

TABLE 1-18

AVERAGE PERCENTS CORRECT IN MATHEMATICS OF 13-YEAR-OLD STUDENTS, BY SEX AND COUNTRY, 1991

Country*	Total	Boys	Girls	Difference
Average	58.3			
China	80.2	81.7	78.5	3.2
Korea	73.4	74.4	72.2	2.2
Taiwan	72.7	73.1	72.4	0.7
Switzerland	70.8	72.8	68.7	4.1
Soviet Union	70.2	70	70.3	−0.3
Hungary	68.4	68.5	68.3	0.2
France	64.2	65.5	62.8	2.7
Italy	64.0	65.8	62.1	3.7
Israel	63.1	64.4	61.8	2.6
Canada	62.0	63.0	60.9	2.1
Scotland	60.6	60.4	60.8	−0.4
England	60.6	60.8	60.4	0.4
Ireland	60.5	62.6	58.4	4.2
Slovenia	57.1	58.1	56.1	2.0
Spain	55.4	57.1	53.8	3.3
United States	55.3	55.8	54.8	1.0
Portugal	48.3	48.9	47.9	1.0
Jordan	40.4	41.4	39.1	2.3
Brazil, Sao Paulo	37.0	37.9	36.2	1.7
Brazil, Fortaleza	32.4	35.2	30.5	4.7
Mozambique	28.3	28.8	27.8	1.0

*In descending order of total scores

SOURCE: Admissons Testing Program of the College Board

TABLE 1-19

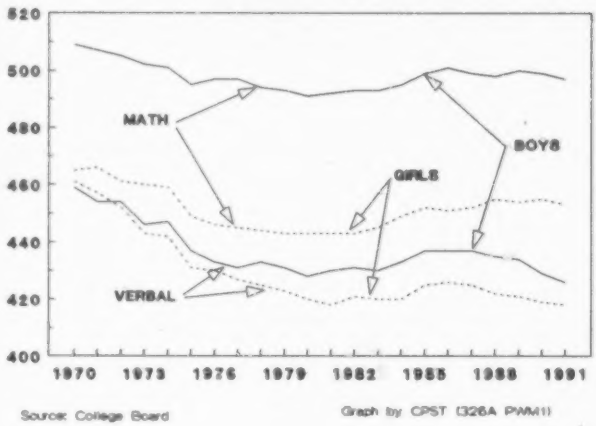
SAT SCORE AVERAGES FOR COLLEGE–BOUND SENIORS BY SEX 1970 – 1991

	VERBAL			MATHEMATICS		
Year	Boys	Girls	Total	Boys	Girls	Total
1970	459	461	460	509	465	488
1971	454	457	455	507	466	488
1972	454	452	453	505	461	484
1973	446	443	445	502	460	481
1974	447	442	444	501	459	480
1975	437	431	434	495	449	472
1976	433	430	431	497	446	472
1977	431	427	429	497	445	470
1978	433	425	429	494	444	468
1979	431	423	427	493	443	467
1980	428	420	424	491	443	466
1981	430	418	424	492	443	466
1982	431	421	426	493	443	467
1983	430	420	425	493	445	468
1984	433	420	426	495	449	471
1985	437	425	431	499	452	475
1986	437	426	431	501	451	475
1987	437	425	431	499	452	475
1988	435	422	428	498	455	476
1989	434	421	427	500	454	476
1990	429	419	424	499	455	476
1991	426	418	422	497	453	474

Note: Scores range from 200 to 800.

CHART 1-4

SAT SCORES BY SEX, 1970-91
(Maximum score 800)



Source: College Board

Graph by CPST (326A PWM1)

TABLE 1-20

PERCENTAGE, SAT SCORES, AND SEX OF COLLEGE–BOUND SENIORS PLANNING SCIENCE/ENGINEERING MAJORS, 1985, 1987 & 1988

	Percent of Stud.			SAT–Verbal			Change	SAT–Math			Change	%Female		
Field	1985	1987	1988	1985	1987	1988	85–88	1985	1987	1988	85–88	'85	'87	'88
Physical Sciences	1.7	1.3	1.3	504	507	500	–4	578	576	568	–10	31%	30%	32%
Mathematics	1.1	0.7	0.6	456	475	468	12	588	602	596	8	51	48	48
Computer/Info Sci	7.1	3.4	3.0	409	403	400	–9	488	476	470	–18	37	35	37
Engineering	11.7	10.1	9.4	453	456	453	0	556	554	547	–9	15	16	17
Biological Sciences	3.1	3.1	3.2	474	476	470	–4	519	517	514	–5	54	54	54
Agric/Nat Res.	1.0	1.2	1.2	394	416	414	20	429	446	447	18	33	42	41
Social Sci/History	8.1	9.9	10.9	463	465	459	–4	480	483	482	2	52	65	65
All Test Takers				431	431	428	–3	475	475	476	1			

SOURCE: Admissons Testing Program of the College Board

TABLE 1-21

SAT SCORES BY RACE OR ETHNIC GROUP, 1976 – 1991

	ALL SCORES		WHITE		BLACK		ASIAN		AMER.INDIAN		MEXICAN AM.		PUERTO RICAN		OTHER HISPAN		OTHER	
Year	Verbal	Math	Verbal	Math	Verbal	Math	Verbal	Math	Verbal	Math	Verbal	Math	Verbal	Math	Verbal	Math	Verbal	Math
1976	431	472	451	493	332	354	414	518	388	420	371	410	364	401			410	458
1977	429	470	448	489	330	357	405	514	390	421	370	408	355	397			402	457
1978	429	468	446	485	332	354	401	510	387	419	370	402	349	388			399	450
1979	427	467	444	483	330	358	396	511	386	421	370	410	345	388			393	447
1980	424	466	442	482	330	360	396	509	390	426	372	413	350	394			394	449
1981	424	466	442	483	332	362	397	513	391	425	373	415	353	398			388	447
1982	426	467	444	483	341	366	398	513	388	424	377	416	460	403			392	449
1983	425	468	443	484	339	369	395	514	388	425	375	517	358	403			386	446
1984	426	471	445	487	342	373	398	519	390	427	376	420	358	405			388	450
1985	432	475	449	491	346	376	404	518	392	428	382	426	368	409			391	448
1987	431	476	447	489	351	377	405	521	393	432	379	424	360	400	387	432	405	453
1988	428	476	445	490	353	384	408	522	393	435	382	428	355	402	387	433	410	460
1989	427	476	446	491	351	386	409	525	384	428	381	430	360	406	389	436	414	467
1990	424	476	442	491	352	385	410	528	388	437	380	429	359	405	383	434	410	467
1991	422	474	441	489	351	385	411	530	393	437	377	427	361	406	382	431	411	466

Notes: SAT scores were not available by ethnic group prior to 1976. In 1986, these data were not available due to changes in the student descriptive questionnaire. The "Other Hispanic" category was added in 1987.

SOURCE: American College Testing Program

TABLE 1-22

AVERAGE ACT SCORES BY SEX, RACE AND ACADEMIC PREPARATION, 1987–91

	English			Mathematics			Social Studies			Natural Sciences			Composite				
	1987	1988	1989	1987	1988	1989	1987	1988	1989	1987	1988	1989	1987	1988	1989	1990	1991
Men	17.9	18.0	17.8	18.6	18.4	18.3	18.4	18.4	18.1	22.8	22.8	22.6	19.5	19.6	19.3	21.0	20.9
Women	18.9	19.0	18.9	16.1	16.1	16.1	16.7	16.6	16.4	20.1	20.2	20.0	18.1	18.1	18.0	20.3	20.4
Am. Indian	14.6	14.7	14.6	12.5	12.8	12.8	13.2	13.3	13.0	17.8	18.1	17.9	14.6	14.9	14.7	18.0	18.2
Asian	18.2	18.4	18.5	20.9	21.0	21.2	17.7	17.7	17.9	22.0	22.1	21.9	19.8	19.9	20.0	21.7	21.6
Black	14.4	14.5	14.4	11.0	11.3	11.6	12.1	12.2	12.0	15.7	15.9	15.7	13.4	13.6	13.6	17.0	17.0
Mexican–Am.	15.6	15.9	15.6	13.7	14.0	14.1	13.9	14.1	13.7	17.9	18.2	17.8	15.4	15.7	15.4	18.3	18.4
Other Hispanic	16.7	16.9	16.8	15.5	15.8	15.9	15.5	15.8	15.5	19.3	19.3	19.2	16.9	17.1	17.0	19.3	19.3
White	19.1	19.2	19.2	18.0	18.0	17.9	18.3	18.3	18.1	22.2	22.3	22.1	19.6	19.6	19.4	21.2	21.3
Compl. Core*	20.1	20.2	20.1	20.6	20.4	20.2	19.9	19.7	19.5	23.8	23.6	23.3	21.2	21.1	20.9		
No Core* Compl.	17.5	17.4	17.0	15.2	14.8	14.6	16.2	15.9	15.4	19.9	19.8	19.5	17.3	17.1	16.7		
All	18.4	18.5	18.4	17.2	17.2	17.1	17.5	17.4	17.2	21.4	21.4	21.2	18.7	18.8	18.6	20.6	20.6

* A Core curriculum includes at least four years of English and at least three years each of mathematics, natural sciences, and social sciences.

SOURCE: Science and Engineering Indicators, National Science Board, 1991

TABLE 1-23

INTENDED MAJORS OF HIGH SCHOOL SENIORS SCORING ABOVE THE 90TH PERCNTILE ON THE MATHEMATICS SAT, BY SEX AND RACE, 1977 – 1990

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Total Science and Engineering														
All Seniors	40	44	46	46	48	50	49	46	46	44	48	47	46	46
White Men	52	60	59	59	59	63	60	59	58	55	59	56	57	56
White Women	32	32	37	34	37	41	40	38	39	34	37	37	37	37
Black Men	38	47	44	48	48	52	53	55	52	51	56	53	53	55
Black Women	25	31	30	30	33	34	36	35	33	31	36	36	36	36
Total Sciences														
All Seniors	27	28	28	27	28	29	28	26	26	23	25	26	26	26
White Men	30	33	31	30	29	30	30	29	28	25	26	26	26	27
White Women	27	26	29	26	28	30	29	28	29	25	27	28	28	29
Black Men	15	19	18	17	19	21	22	23	21	19	22	19	20	21
Black Women	18	21	20	18	21	22	23	22	21	18	21	22	23	22
Mathematics and Statistical Sciences														
All Seniors	5	5	4	4	4	3	3	3	3	3	3	3	3	3
White Men	6	6	5	4	4	4	3	4	4	3	3	3	3	3
White Women	5	5	4	4	4	4	4	4	4	3	3	3	3	3
Black Men	2	2	2	1	2	1	2	1	2	2	2	1	2	2
Black Women	2	3	2	2	1	1	2	2	2	1	2	2	2	2
Computer Sciences														
All Seniors	3	4	5	5	7	9	10	9	7	4	4	3	3	3
White Men	4	5	6	7	8	10	12	11	10	6	6	5	5	4
White Women	2	3	4	4	6	8	8	6	4	2	2	2	1	1
Black Men	3	4	5	4	7	9	11	13	10	7	7	6	6	6
Black Women	2	4	4	4	7	9	11	9	7	5	4	4	4	3
Physical Sciences														
All Seniors	3	3	3	3	3	3	3	3	3	3	3	3	3	3
White Men	5	6	6	6	5	5	4	4	5	5	5	5	4	4
White Women	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Black Men	2	2	2	2	2	1	2	1	2	1	2	2	1	2
Black Women	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Life Sciences														
All Seniors	5	5	5	4	4	4	4	4	4	4	5	6	6	6
White Men	4	5	4	4	3	3	3	3	3	3	4	4	4	4
White Women	7	7	7	5	6	6	5	5	6	6	7	7	7	8
Black Men	2	3	3	2	3	3	3	3	2	3	4	3	3	3
Black Women	3	3	4	3	3	3	3	4	4	4	4	5	4	4
Earth and Environmental Sciences														
All Seniors	1	1	1	1	1	1	1	1	1	1				
White Men	1	2	1	1	1	1	1	1	1	1				
White Women	1	1	1	1	1	1	1	1	1	1				
Black Men		1	1	1					2					
Black Women														
Psychology														
All Seniors	4	4	4	4	4	4	3	3	4	4	4	5	5	5
White Men	1	2	1	1	1	1	1	1	1	1	1	1	1	1
White Women	3	3	4	3	4	4	3	4	5	4	5	5	5	5
Black Men		1	1	1										
Black Women	4	5	5	4	4	3	3	3	4	4	5	5	6	5
Social Sciences														
All Seniors	3	4	4	3	3	3	2	2	2	2	3	3	3	3
White Men	4	4	4	4	3	3	3	3	3	4	4	4	5	4
White Women	5	4	5	4	4	4	4	4	5	5	6	7	7	7
Black Men	3	3	3	3	2	2	2	2	3	3	3	3	3	3
Black Women	4	5	4	3	3	3	3	3	3	3	4	5	5	5

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Other Sciences														
All Seniors	2	2	3	2	2	2	2	2	2	2	2	3	3	3
White Men	5	5	5	4	4	4	3	3	3	2	3	4	4	4
White Women	2	2	3	2	2	2	2	2	2	2	2	3	3	3
Black Men	2	3	3	3	3	2	2	2	2	3	3	3	3	3
Black Women	1	2	1	1	2	1	1	1	1	1	1	2	2	2
Total Engineering														
All Seniors	14	16	18	19	20	22	21	20	20	21	23	21	20	20
White Men	22	27	28	29	29	32	30	29	30	30	33	30	31	29
White Women	5	6	8	8	10	12	11	10	11	10	10	10	9	9
Black Men	21	28	26	31	29	31	31	32	31	32	34	34	33	34
Black Women	7	10	10	12	12	12	13	13	12	13	14	14	12	14
Total Non–Science/Engineering														
All Seniors	25	28	31	27	28	29	26	25	29	28	34	35	35	35
White Men	23	27	26	25	23	22	20	21	23	22	30	29	29	28
White Women	29	30	36	31	34	36	32	31	38	35	40	40	41	40
Black Men	20	25	25	25	22	22	20	23	23	25	32	34	35	33
Black Women	29	35	35	29	34	29	29	30	35	35	46	47	46	46
Humanities														
All Seniors	6	6	7	5	6	6	5	4	5	5	6	6	6	6
White Men	4	4	4	4	4	3	3	3	3	4	4	5	5	5
White Women	9	9	10	8	8	9	8	7	9	8	9	9	10	9
Black Men	3	3	3	3	2	2	2	2	2	3	3	3	3	3
Black Women	5	6	6	4	5	4	3	3	4	4	4	5	5	5
Premedicine														
All Seniors	8	8	8	8	8	8	8	8	9	7	8	7	7	7
White Men	8	9	8	8	8	7	7	8	6	6	5	5	5	5
White Women	7	6	7	7	7	8	8	8	8	7	7	6	6	6
Black Men	8	8	7	8	7	8	7	8	7	6	8	6	7	7
Black Women	10	11	11	10	12	11	11	11	12	12	14	12	12	13
Pre–law														
All Seniors	2	4	4	3	3	3	3	3	3	3	2	4	4	4
White Men	3	5	5	4	4	4	3	3	3	2	3	4	4	4
White Women	2	3	3	3	4	4	3	3	4	3	4	4	4	5
Black Men	2	3	4	3	2	3	3	3	3	2	3	4	5	5
Black Women	3	5	5	4	5	4	4	4	4	4	6	7	8	7
Business														
All Seniors	7	8	10	9	9	10	9	8	10	11	14	15	15	14
White Men	7	8	9	8	8	8	7	7	9	9	13	14	14	14
White Women	7	8	11	10	11	12	11	10	14	13	15	15	15	14
Black Men	7	10	10	10	9	9	8	10	10	13	17	19	19	17
Black Women	8	10	12	10	12	10	10	11	13	14	20	20	19	18
Education														
All Seniors	3	2	2	2	2	2	1	1	2	2	3	3	3	3
White Men	1	1	1		1				1	1	1	2	1	2
White Women	5	4	4	3	4	3	3	3	4	4	5	6	6	7
Black Men	1	1	1	1				1	1		1	1	1	1
Black Women	3	3	3	1	1	1	1	1	1	1	2	3	3	3
Other, Undecided, Missing														
All Seniors	34	28	23	27	26	21	26	29	25	28	18	19	19	19
White Men	25	14	15	16	19	15	20	21	19	23	14	15	15	15
White Women	38	38	27	37	29	23	28	33	23	31	22	22	22	22
Black Men	44	29	30	28	31	26	27	22	25	25	12	13	13	13
Black Women	46	35	34	42	34	37	35	35	32	34	18	17	18	18

SOURCE: The American Freshman: National Norms for Fall 1971 through 1991, Cooperative Institutional Reserach Program, American Council on Education, University of California, Los Angeles

TABLE 1-24

RACIAL BACKGROUND OF FRESHMEN IN ALL INSTITUTIONS OF HIGHER EDUCATION SELECTED YEARS, 1971 –1991

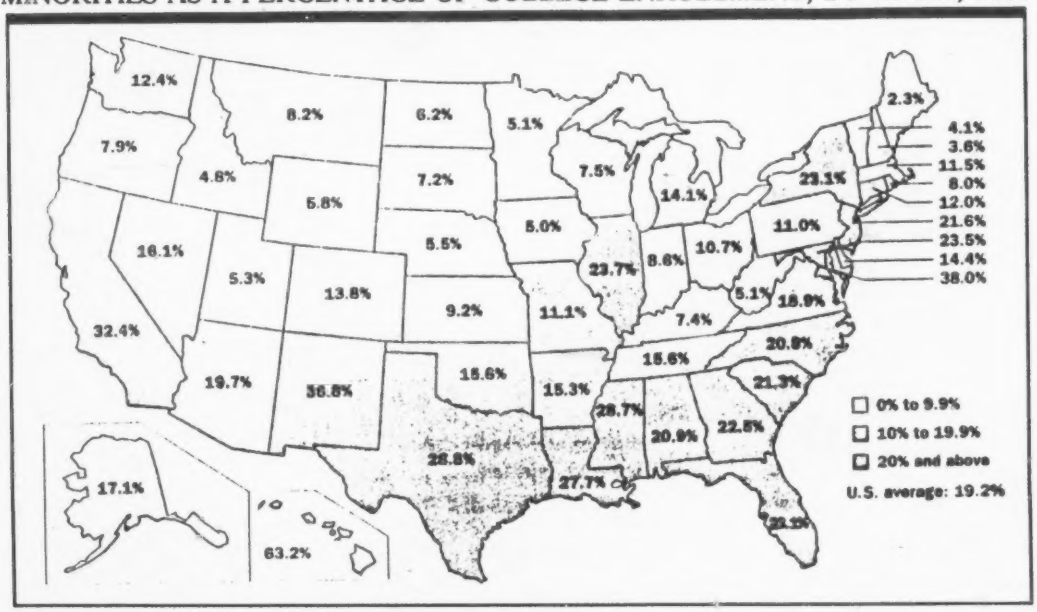
	WHITE		BLACK		AM INDIAN		ASIAN		MEX AMER		PUERTO RICAN		OTHER	
YEAR	Men	Wom	Men	Wom	Men	Wom	Men	Wom	Men	Wom	Men	Wom	Men	Wom
1971	92.1	90.6	5.5	7.2	1.0	0.9	0.5	0.4	1.1	1.1	0.2	0.2	1.2	1.1
1973	89.1	87.9	7.0	8.6	0.8	1.0	1.2	1.0	1.3	1.2	0.5	0.4	1.5	1.5
1975	87.2	85.6	8.0	10.1	0.9	0.8	1.6	1.3	1.8	1.6	0.7	0.6	2.1	1.7
1977	87.9	86.0	7.8	9.8	0.8	0.7	1.2	1.0	1.4	1.4	0.9	1.0	1.9	1.6
1979	87.2	85.4	8.2	10.1	1.0	1.0	1.6	1.2	1.1	1.2	1.1	1.0	2.2	1.8
1981	89.5	87.6	7.5	9.6	1.1	1.0	1.2	1.0	0.9	0.9	0.6	0.6	1.8	1.2
1983	88.0	85.9	7.8	10.1	1.0	1.1	1.7	1.4	0.9	0.9	0.7	0.7	1.8	1.5
1984	86.9	84.6	8.6	10.9	1.0	0.9	1.8	1.5	0.9	1.1	0.8	0.8	1.7	1.7
1985	87.3	87.3	8.1	10.0	1.0	1.1	2.1	1.8	1.0	1.4	0.6	0.7	1.5	1.5
1986	86.9	86.9	7.3	9.6	0.9	0.8	2.8	2.3	1.2	1.3	0.8	0.9	1.9	2.0
1987	87.6	84.5	7.2	10.0	0.9	0.9	2.6	2.1	0.9	1.1	0.9	1.5	1.6	1.7
1988	84.7	81.8	8.0	10.7	0.8	0.8	3.2	2.5	1.5	2.0	1.2	1.5	2.2	2.2
1989	85.6	83.3	7.8	10.3	0.8	1.0	3.3	2.6	1.2	1.5	0.8	0.9	2.1	2.0
1990	85.2	83.5	8.5	10.6	1.2	1.4	3.1	2.8	1.4	1.5	0.5	0.6	1.8	1.7
1991	84.5	82.4	8.0	10.3	1.5	1.6	3.3	2.8	2.4	3.0	0.6	0.6	1.9	1.8
AVG	87.3	85.6	7.7	9.9	1.0	1.0	2.1	1.7	1.3	1.4	0.7	0.8	1.8	1.7

Note: Percentages sum to slightly more than 100 because some students checked more than one category

SOURCE: *CHRONICLE OF HIGHER EDUCATION* January 22, 1992

CHART 1-5

MINORITIES AS A PERCENTAGE OF COLLEGE ENROLLMENT, BY STATE, 1990



SOURCE: The American Freshman: National Norms for Fall 1975 through 1991, Cooperative Institutional Research Program, American Council on Education and University of California, Los Angeles

TABLE 1-25

PERCENTAGE DISTRIBUTION OF FRESHMEN BY PROBABLE MAJOR FIELD OF STUDY IN ALL INSTITUTIONS OF HIGHER EDUCATION, 1975 – 1991

Probable Major Field of Study	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	AVG
								Men										
Arts & Humanities	12.7	12.4	7.5	7.4	7.5	6.4	7.4	6.8	6.8	6.6	7.1	7.4	8.7	8.0	7.6	7.7	7.4	8.0
Biological Sciences	7.1	6.7	4.8	4.8	4.3	3.7	3.9	3.7	4.1	4.1	3.4	4.0	3.8	4.1	3.8	4.0	4.3	4.4
Agriculture/Forestry	5.7	5.3	5.4	4.5	4.5	4.1	5.0	3.8	2.9	3.3	3.2	2.8	2.6	2.4	2.0	2.0	3.2	3.7
Business	20.0	22.5	23.8	25.0	25.1	22.9	22.7	22.3	22.7	25.1	25.7	26.6	28.6	27.6	25.9	22.1	18.2	24.3
Education	4.6	4.5	3.8	3.3	3.6	3.3	2.9	2.4	2.9	2.8	3.3	3.8	4.0	3.8	4.0	4.6	5.0	3.6
Engineering	14.0	15.2	17.0	18.8	19.2	21.0	21.3	22.3	20.6	20.1	19.3	19.7	17.0	17.5	18.8	17.8	18.7	18.7
Physical Sciences	4.0	3.9	3.5	3.5	3.2	3.6	2.9	2.6	2.5	2.5	2.3	2.2	2.3	2.3	2.4	2.3	2.2	2.9
Mathematics/Statistics	1.1	1.1	1.0	1.1	0.7	0.7	0.6	0.6	0.8	0.8	0.8	0.9	0.6	0.6	0.7	0.7	0.6	0.8
Computer Science			1.2	1.6	2.1	2.7	3.9	4.9	5.4	4.3	3.1	2.6	2.3	2.4	2.3	2.0	2.0	2.7
Health Prof (non–M.D.)	1.8	1.5	2.3	2.0	1.9	1.9	1.7	1.6	2.1	2.3	2.0	2.0	1.9	2.5	2.6	3.6	4.6	2.1
Premed, Predent, Prevet.			3.8	4.0	3.6	3.6	3.1	3.2	3.3	3.2	3.1	2.9	2.5	2.6	2.8	2.9	2.9	3.2
Social Sciences*	3.7	3.2	5.8	5.0	5.0	4.5	4.3	4.2	4.2	5.1	5.2	5.3	5.6	6.6	6.2	6.4	5.9	5.0
Other Fields (Technical)	10.3	8.6	8.7	7.0	8.6	8.5	9.9	9.7	9.9	7.7	7.5	6.4	6.5	3.7	5.7	7.0	7.1	7.9
Other Fields (Non–Tech)	10.2	11.2	7.4	8.1	6.8	9.3	6.4	8.2	8.1	8.0	9.0	10.0	8.1	9.5	9.4	11.7	11.9	8.8
Undecided	4.6	4.3	4.0	3.9	3.9	3.8	3.9	3.7	4.0	4.1	4.7	5.4	5.4	5.9	5.7	6.0	5.9	4.6
								Women										
Arts & Humanities	12.8	12.7	11.1	10.6	10.7	10.1	10.5	9.7	9.0	8.8	9.8	10.0	10.8	10.3	9.9	9.6	9.2	10.4
Biological Sciences	5.5	5.7	4.5	4.4	3.9	3.8	3.7	3.8	3.4	4.2	3.3	3.8	3.7	3.5	3.6	3.7	4.7	4.0
Agriculture/Forestry	1.9	2.0	2.0	2.0	1.7	1.8	2.2	1.4	0.9	1.0	1.0	1.7	0.8	1.0	0.5	0.7	0.8	1.4
Business	17.5	19.2	21.1	23.1	23.1	24.5	25.0	25.7	26.0	27.5	27.5	27.0	26.0	24.0	23.3	20.0	18.1	23.8
Education	15.5	14.3	13.6	12.1	12.5	11.6	10.8	9.0	8.9	9.6	10.4	12.1	13.3	13.9	13.3	14.1	15.1	12.2
Engineering	1.3	1.6	1.8	2.3	2.5	3.2	3.1	3.6	3.5	3.0	3.0	2.9	2.7	2.6	2.7	2.7	2.9	2.7
Physical Sciences	1.3	1.4	1.3	1.3	1.2	1.6	1.0	1.0	1.0	1.1	0.9	1.0	0.9	1.0	1.2	0.9	1.0	1.1
Mathematics/Statistics	1.1	0.8	0.7	0.8	0.6	0.6	0.6	0.7	0.8	0.9	0.8	0.7	0.6	0.6	0.6	0.7	0.6	0.7
Computer Science			0.9	1.2	1.4	2.4	3.2	4.0	3.7	2.7	1.6	1.3	0.9	1.0	1.0	1.4	1.1	1.9
Health Prof (non–M.D.)	13.2	12.4	15.5	14.6	13.4	13.3	13.1	13.2	14.9	13.8	11.6	9.9	9.3	9.8	9.4	12.9	16.5	12.5
Premed, Predent, Prevet.			2.8	2.9	2.9	3.2	2.9	3.0	3.2	3.1	3.2	2.9	2.5	3.0	3.1	3.4	3.4	3.0
Social Sciences*	8.9	8.2	9.9	9.5	9.6	8.6	7.9	7.2	7.6	8.4	9.6	10.2	10.5	12.1	12.5	12.6	10.8	9.6
Other Fields (Technical)	6.7	6.5	2.3	2.0	2.7	2.9	4.0	4.3	3.8	2.4	2.4	1.9	1.7	1.3	1.4	1.5	1.5	3.0
Other Fields (Non–Tech)	8.8	10.3	13.4	7.9	7.6	6.9	6.9	3.3	7.1	7.6	8.1	7.9	8.4	8.2	8.5	8.5	8.4	8.1
Undecided	5.5	5.1	5.3	5.3	5.6	5.5	5.4	5.5	5.7	6.2	6.9	7.5	7.6	7.6	7.9	7.1	7.2	6.2
								All										
Arts & Humanities	12.8	12.4	9.5	9.0	9.2	8.9	8.9	8.2	7.9	7.7	8.3	9.0	10.0	9.3	8.7	8.9	8.4	9.3
Biological Sciences	6.3	6.2	4.7	4.6	4.0	3.7	3.7	3.7	3.8	4.2	3.4	3.9	3.8	3.7	3.7	3.7	4.4	4.2
Agriculture/Forestry	3.9	3.6	3.6	3.1	3.0	2.9	3.5	2.6	1.9	2.0	2.0	1.8	1.7	1.7	1.2	1.3	2.0	2.5
Business	18.9	20.9	22.2	23.3	24.3	23.9	23.7	24.2	24.4	26.4	26.8	26.9	27.0	25.6	24.5	21.1	18.1	24.0
Education	9.9	9.3	8.8	8.0	8.4	7.7	7.1	6.0	6.0	6.5	7.1	8.1	8.9	9.3	9.2	9.9	9.5	8.1
Engineering	7.9	8.5	9.3	10.3	10.6	11.8	12.0	12.6	11.7	11.0	10.7	10.9	9.4	9.5	10.2	9.6	10.1	10.4
Physical Sciences	2.7	2.7	2.3	2.4	2.3	2.0	2.1	1.9	1.8	1.8	1.6	1.7	1.6	1.5	1.6	1.7	1.6	2.0
Mathematics/Statistics	1.1	1.0	0.8	0.9	0.6	0.6	0.6	0.6	0.8	0.8	0.8	0.7	0.6	0.6	0.6	0.7	0.6	0.7
Computer Science			1.0	1.4	1.8	2.5	3.5	4.4	4.5	3.4	2.3	1.9	1.6	1.7	1.6	1.7	1.5	2.4
Health Prof (non–M.D.)	7.3	6.9	9.1	8.6	7.9	7.9	7.6	7.6	8.7	8.2	7.1	6.2	5.9	6.5	4.6	8.6	11.1	7.4
Premed, Predent, Prevet.			3.3	3.4	3.2	3.4	3.0	3.1	3.2	3.2	3.1	2.9	2.5	2.8	3.0	3.2	3.2	3.1
Social Sciences*	6.2	5.6	7.6	7.4	7.8	6.7	6.2	5.8	6.1	6.7	7.6	8.0	8.1	9.5	9.6	9.6	8.4	7.4
Other Fields (Technical)	8.6	7.5	5.4	5.6	5.5	6.9	6.8	7.8	7.5	5.8	5.6	4.0	4.0	2.5	3.3	4.0	4.0	5.7
Other Fields (Non–Tech)	9.5	10.7	7.3	6.6	7.2	5.5	6.5	6.6	6.8	6.9	7.6	7.0	8.3	8.9	6.0	9.5	9.9	7.6
Undecided	5.0	4.7	4.7	4.6	4.8	4.7	4.7	4.6	4.9	5.2	5.9	6.5	6.6	6.8	6.9	6.6	6.6	5.5

* Political Science is included in Arts and Humanities through 1975 and then in Social Sciences.

SOURCE: Science & Engineering Indicators - 1989, National Science Board

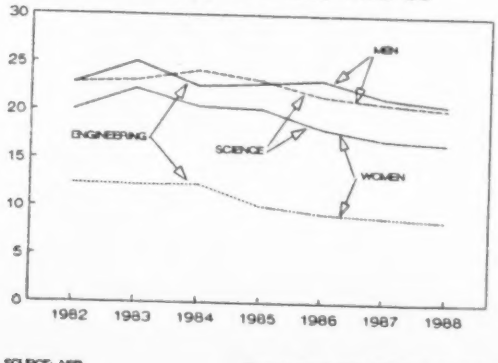
TABLE 1-26

COLLEGE MAJOR CHOICES OF MERIT SCHOLARS BY SEX & FIELD, 1982 - 1988

								% Men/Women in Field of Total Men/Women in Field						
FIELD	1982	1983	1984	1985	1986	1987	1988	1982	1983	1984	1985	1986	1987	1988
ALL FIELDS	6965	7208	7564	7726	7569	7607	7665	100	100	100	100	100	100	100
Men	4249	4262	4606	4868	4915	4804	4817	100	100	100	100	100	100	100
Women	2716	2946	2958	2858	2654	2803	2848	100	100	100	100	100	100	100
ENGINEERING	1305	1429	1402	1400	1389	1281	1242	19	20	19	18	18	17	16
Men	969	1068	1039	1112	1142	1030	997	23	25	23	23	23	21	21
Women	336	361	363	288	247	251	245	12	12	12	10	9	9	9
NATURAL SCIENCES	1517	1642	1715	1705	1543	1480	1455	22	23	23	22	20	19	19
Men	973	986	1112	1127	1060	1002	979	23	23	24	23	22	21	20
Women	544	656	603	578	483	478	476	20	22	20	20	18	17	17
Physical Sciences	536	544	571	648	601	588	593	8	8	8	8	8	8	8
Men	396	374	433	477	458	440	454	9	9	9	10	9	9	9
Women	140	170	138	171	143	148	139	5	6	5	6	5	5	5
Biological Sciences	450	472	496	525	470	466	481	6	7	7	7	6	6	6
Men	215	184	214	241	229	234	241	5	4	5	5	5	5	5
Women	235	288	282	284	241	232	240	9	10	10	10	9	8	8
Computer Sciences	348	460	418	313	245	215	209	5	6	6	4	3	3	3
Men	244	325	326	264	219	186	180	6	8	7	5	4	4	4
Women	104	135	92	49	26	29	29	4	5	3	2	1	1	1
Math & Statistics	183	166	230	219	227	211	172	3	2	3	3	3	3	2
Men	118	103	139	145	154	142	104	3	2	3	3	3	3	2
Women	65	63	91	74	73	69	68	2	2	3	3	3	2	2
HEALTH SCIENCES	682	659	666	686	658	546	485	10	9	9	9	9	7	6
Men	357	344	359	386	384	312	249	8	8	8	8	8	6	5
Women	325	315	307	300	274	234	236	12	11	10	10	10	8	8
HUMANITIES & SOC SCI	1125	1164	1268	1401	1519	1492	1515	16	16	17	18	20	20	20
Men	581	574	626	706	809	775	758	14	13	14	15	16	16	16
Women	544	590	642	695	710	717	757	20	20	22	24	27	26	27
BUSINESSS	273	235	253	292	317	287	319	4	3	3	4	4	4	4
Men	135	100	114	157	170	171	183	3	2	2	3	3	4	4
Women	138	135	139	135	147	116	136	5	5	5	5	6	4	5
OTHER & UNDECIDED	546	437	545	537	600	1041	1194	8	6	7	7	8	14	16
Men	261	204	244	253	290	512	672	6	5	5	5	6	11	14
Women	285	233	301	284	310	529	522	10	8	10	10	12	19	18

CHART 1-6

PERCENT OF MERIT SCHOLARS ELECTING NS/E MAJORS BY SEX, 1982-88



SOURCE: NSB

Graph by OPST 0276 MERITNSE E1-18D

SOURCE: The American Freshman: National Norms for Fall 1980 through 1991, Cooperative Institutional Research Program, American Council on Education and University of California, Los Angeles

TABLE 1-27

PROBABLE CAREER CHOICES OF COLLEGE FRESHMEN, BY SEX (WEIGHTED NATIONAL NORMS) SELECTED YEARS, 1980 – 1991

	MEN									WOMEN								
FIELD	1980	1982	1984	1986	1988	1989	1990	1991	Avg	1980	1982	1984	1986	1988	1989	1990	1990	Avg
Accountant/Actuary	5.4	5.1	5.2	5.1	5.4	5.2	4.0	3.8	4.9	6.2	6.5	6.8	6.5	6.4	6.3	5.5	5.5	6.2
Actor/Entertainer	0.9	0.7	0.7	0.9	1.0	0.9	0.8	0.8	0.8	1.0	1.0	0.9	1.0	1.1	0.9	0.9	0.9	1.0
Architect/Urban Pl	2.8	2.2	2.2	2.3	2.8	3.0	3.9	3.7	2.9	0.8	0.6	0.5	0.7	0.8	0.8	1.1	0.9	0.8
Artist	1.4	1.3	1.3	1.4	1.7	1.6	1.5	1.6	1.5	2.4	2.1	1.6	1.9	1.8	1.8	1.6	1.7	1.9
Business									0.0									0.0
Clerical	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.4	0.3	3.9	3.5	3.5	2.4	1.6	1.7	2.0	2.0	2.6
Executive (Mgmt)	11.1	10.8	12.5	13.9	14.0	12.8	10.6	8.3	11.8	9.2	10.1	11.4	12.1	11.0	9.9	8.3	6.4	9.8
Owner/Proprietor	4.1	3.9	4.5	5.3	5.7	5.0	4.5	4.0	4.6	1.3	1.5	1.7	2.3	2.4	2.0	1.5	1.2	1.7
Salesperson/Buyer	1.1	1.1	1.3	1.5	1.4	1.4	1.4	1.1	1.3	1.2	1.2	1.3	1.7	1.3	1.4	1.3	1.1	1.3
Clergy	0.7	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.1
Clin. Psychologist	0.4	0.3	0.5	0.6	0.7	0.6	0.6	0.6	0.5	1.4	1.4	1.7	2.1	2.6	2.5	2.5	2.2	2.1
College Teacher	0.2	0.2	0.3	0.4	0.4	0.4	0.4	0.5	0.4	0.2	0.2	0.2	0.3	0.3	0.4	0.3	0.5	0.3
Comp. Prog/Analyst	5.6	9.7	7.7	4.6	3.8	3.5	3.1	2.9	5.1	4.9	8.0	4.6	2.5	1.8	1.9	2.2	2.0	3.5
Cnserv./Forester	1.4	1.3	1.1	1.4	1.3	1.0	0.9	1.7	1.3	0.7	0.5	0.2	0.3	0.2	0.3	0.3	0.5	0.4
Dentist, incl Ortho	1.2	0.9	0.7	0.7	0.6	0.6	0.6	0.6	0.7	0.7	0.5	0.5	0.4	0.5	0.5	0.6	0.5	0.5
Dietician/Home Econ	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.7	0.6	0.5	0.4	0.3	0.4	0.3	0.3	0.4
Engineer	19.1	20.6	18.5	17.4	15.7	16.5	14.9	16.2	17.4	2.9	3.6	2.9	2.8	2.5	2.6	2.4	2.7	2.8
Farmer/Rancher	2.0	2.0	1.6	1.0	0.8	0.8	0.8	1.2	1.3	0.4	0.4	0.3	0.1	0.2	0.1	0.1	0.2	0.2
Foreign Serv. Work	0.4	0.4	0.5	0.6	0.7	0.6	0.6	0.5	0.5	0.6	0.7	0.8	1.2	1.4	1.2	1.0	0.9	1.0
Homemaker (ft)	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.2	0.2	0.1	0.2	0.1	0.2	0.4	0.5	0.2
Interior Decorator	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	1.0	1.0	0.8	1.0	0.9	0.9	0.8	0.8	0.9
Interpreter (Trans)	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.4	0.3	0.3	0.3	0.2	0.2	0.3
Lab Tech/Hygienist	0.6	0.5	0.4	0.3	0.3	0.3	0.2	0.3	0.4	2.3	2.0	1.5	1.1	0.6	0.6	0.6	0.9	1.2
Law Enforce Officer	1.8	1.9	1.8	1.7	2.0	1.9	2.4	3.3	2.1	0.6	0.5	0.5	0.6	0.5	0.4	0.5	0.6	0.5
Lawyer/Judge	4.8	4.7	4.4	4.1	5.5	5.3	4.9	4.2	4.7	3.5	3.9	3.7	4.0	5.3	5.4	5.5	4.9	4.5
Military Career	1.7	1.6	2.1	2.3	2.1	1.7	2.4	1.6	1.9	0.2	0.2	0.3	0.3	0.2	0.2	0.3	0.2	0.2
Musician	1.5	1.4	1.2	1.5	1.4	1.4	1.3	1.3	1.4	0.9	0.9	0.7	0.8	0.8	0.7	0.7	0.7	0.8
Nurse	0.2	0.2	0.2	0.2	0.3	0.3	0.7	1.2	0.4	7.2	7.7	7.5	5.1	4.4	4.8	6.5	8.7	6.5
Optometrist	0.2	0.2	0.3	0.2	0.3	0.2	0.3	0.3	0.3	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.4	0.3
Pharmacist	0.5	0.3	0.5	0.6	0.8	0.8	0.9	0.9	0.7	0.5	0.5	0.8	0.8	1.3	1.2	1.2	1.4	1.0
Physician	4.1	4.1	4.5	3.9	4.0	4.0	3.9	4.4	4.1	2.9	3.1	3.5	3.4	3.5	3.6	3.7	4.4	3.5
School Counselor	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.3	0.2	0.3	0.4	0.4	0.5	0.6	0.5	0.4
School Princ/Supt.	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Scientific Research	2.2	1.9	1.9	1.8	2.0	1.9	1.7	1.8	1.9	1.3	1.2	1.2	1.1	1.3	1.4	1.2	1.2	1.2
Social/Rec. Worker	0.6	0.3	0.4	0.4	0.3	0.3	0.3	0.4	0.4	3.2	2.0	2.1	2.3	2.2	2.1	2.3	2.0	2.3
Statistician	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1
Therapist	0.6	0.5	0.9	0.9	1.0	1.2	1.6	1.9	1.1	3.4	3.3	3.8	3.2	3.4	3.8	3.6	4.7	3.7
Teacher (Elemen)	0.5	0.4	0.4	0.6	0.7	0.7	0.9	0.9	0.6	6.9	5.5	6.1	7.9	9.7	8.7	9.2	9.0	7.9
Teacher (Second)	1.9	1.4	1.8	2.6	2.7	2.8	3.0	3.2	2.4	2.4	1.9	2.5	3.1	3.6	3.5	4.0	3.7	3.1
Veterinarian	0.9	0.8	0.7	0.7	0.6	0.5	0.5	0.6	0.7	1.5	1.5	1.5	1.1	1.1	1.0	1.3	1.6	1.3
Writer/Journalist	1.6	1.6	1.6	1.6	1.9	1.6	1.5	1.4	1.6	2.5	2.6	2.4	2.9	2.9	2.9	2.6	2.2	2.6
Skilled Trades	3.2	2.9	2.4	2.6	1.2	2.5	4.1	3.3	2.8	0.5	0.3	0.2	0.3	0.2	0.3	0.4	0.4	0.3
Other Career	5.8	5.6	5.3	5.8	6.2	7.6	8.9	9.4	6.8	8.1	7.5	7.7	7.7	7.4	9.5	10.4	9.6	8.5
Undecided	8.9	8.1	9.2	9.9	9.8	10.0	10.3	10.4	9.6	11.3	10.8	12.3	13.2	12.9	13.0	11.8	11.9	12.2

SOURCE: *Digest of Education Statistics 1990,* U.S. Department of Education

TABLE 1-28

EXPECTED OCCUPATIONS OF 8TH GRADERS AT AGE 30, BY SELECTED STUDENT AND SCHOOL CHARACTERISTICS, 1988

Expected occupation at age 30	All 8th graders	Sex		Race/ethnicity					Socioeconomic status [1]			Control of school attended		
		Male	Female	White	Black	Hispanic	Asian	American Indian	Low	Middle	High	Public	Catholic	Other private
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Craftsperson or operator	4.2	7.6	0.9	4.3	3.2	5.3	3.6	6.6	7.1	4.3	1.4	4.5	2.4	2.0
Farmer or farm manager	1.0	1.7	0.3	1.2	0.1	0.6	0.6	0.3	1.0	1.2	0.5	1.0	0.3	1.0
Housewife/homemaker	2.3	0.2	4.4	2.5	0.9	2.9	1.1	3.1	3.2	1.9	2.2	2.2	2.1	3.8
Laborer or farm worker	0.6	1.0	0.1	0.5	0.6	0.8	0.7	0.2	1.1	0.4	0.3	0.6	0.2	0.1
Military, police, or security officer	9.6	14.9	4.3	9.0	11.4	11.0	7.0	17.0	11.5	10.2	6.5	10.0	6.4	6.0
Professional, business, or managerial	28.6	19.6	37.6	28.7	29.3	26.0	34.9	23.0	20.1	27.6	38.9	27.6	36.2	36.9
Business owner	6.2	6.8	5.6	6.3	5.8	5.7	6.4	5.7	4.7	6.4	7.2	6.0	7.6	8.0
Technical	6.2	8.3	4.2	5.7	8.0	7.3	7.6	6.5	6.4	6.6	5.1	6.4	5.6	4.2
Salesperson, clerical, or office worker	2.8	1.2	4.5	2.7	2.9	3.8	2.3	2.3	3.8	2.9	1.7	2.9	2.1	1.8
Science or engineering professional	5.9	8.5	3.3	6.1	4.2	4.8	9.7	6.4	3.4	5.3	9.4	5.6	7.5	7.6
Service worker	4.9	2.1	7.7	4.9	6.4	3.9	2.3	3.4	7.2	5.0	2.5	5.1	3.2	3.0
Other employment	17.0	17.6	16.5	17.7	16.3	15.1	13.4	11.9	15.7	17.9	16.6	17.0	17.7	16.4
Don't know	10.5	10.4	10.6	10.2	10.4	12.5	10.5	13.5	14.3	10.1	7.5	10.8	8.3	9.1

[1] Socioeconomic status was measured by a composite score on parental education and occupations, family income, and household characteristics. The "Low" SES group is the lowest quartile; the "Middle" SES group is the middle two quartiles; and the "High" SES group is the upper quartile.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "National Education Longitudinal Study of 1988" survey. (This table was prepared June 1989.)

Source: U.S. Department of Education, Digest of Education Statistics, 1990

TABLE 1-29

ENROLLMENT IN HIGHER EDUCATION BY LEVEL AND SEX, 1965 – 1988

(in thousands)

	Total Enrollment				Undergraduate				First–time Freshman				Graduate				First–Professional			
Year	Total	Men	Wom	%Wom	Total	Men	Wom	%Wom	Total	Men	Wom	%Wom	Total	Men	Wom	%Wom	Total	Men	Wom	%Wom
1965	5,921	3,630	2,291	38.7					1,442	829	613	42.5								
1966	6,390	3,856	2,534	39.7					1,554	890	665	42.8								
1967	6,912	4,133	2,779	40.2					1,641	931	710	43.3								
1968	7,513	4,478	3,035	40.4					1,893	1082	810	42.8								
1969	8,005	4,746	3,258	40.7	6,884	4,008	2,876	41.8	1,967	1118	849	43.2	955	590	366	38.3	165	149	16	9.7
1970	8,581	5,044	3,537	41.2	7,376	4,254	3,122	42.3	2,063	1152	911	44.2	1,031	630	400	38.8	173	159	15	8.7
1971	8,949	5,207	3,742	41.8	7,743	4,418	3,325	42.9	2,119	1171	949	44.8	1,012	615	394	38.9	193	174	19	9.8
1972	9,215	5,239	3,976	43.1	7,941	4,429	3,512	44.2	2,153	1158	995	46.2	1,066	626	439	41.2	207	183	23	11.1
1973	9,602	5,371	4,231	44.1	8,261	4,538	3,723	45.1	2,226	1182	1044	46.9	1,123	648	477	42.5	219	186	33	15.1
1974	10,224	5,622	4,601	45.0	8,798	4,765	4,033	45.8	2,366	1244	1122	47.4	1,190	663	526	44.2	235	194	41	17.4
1975	11,185	6,149	5,036	45.0	9,679	5,257	4,422	45.7	2,515	1328	1187	47.2	1,263	700	563	44.6	242	192	50	20.7
1976	11,012	5,811	5,201	47.2	9,429	4,902	4,527	48.0	2,347	1170	1177	50.1	1,333	714	619	46.4	244	190	54	22.1
1977	11,286	5,789	5,497	48.7	9,717	4,897	4,820	49.6	2,395	1156	1239	51.7	1,319	700	617	46.8	251	191	60	23.9
1978	11,260	5,641	5,619	49.9	9,691	4,766	4,925	50.8	2,390	1142	1248	52.2	1,312	682	630	48.0	257	192	65	25.3
1979	11,570	5,683	5,887	50.9	9,999	4,821	5,178	51.8	2,503	1180	1323	52.9	1,309	669	640	48.9	263	193	70	26.6
1980	12,097	5,874	6,223	51.4	10,475	5,000	5,475	52.3	2,588	1219	1369	52.9	1,343	675	670	49.9	278	199	78	28.1
1981	12,372	5,975	6,397	51.7	10,755	5,109	5,646	52.5	2,595	1218	1378	53.1	1,343	674	669	49.8	275	193	82	29.8
1982	12,426	6,031	6,394	51.5	10,825	5,170	5,655	52.2	2,505	1199	1306	52.1	1,322	670	653	49.4	278	191	87	31.3
1983	12,465	6,024	6,441	51.7	10,846	5,158	5,688	52.4	2,444	1159	1285	52.6	1,340	677	663	49.5	279	188	90	32.3
1984	12,242	5,864	6,378	52.1	10,618	5,007	5,611	52.8	2,357	1112	1245	52.8	1,345	672	673	50.0	279	185	94	33.7
1985	12,247	5,818	6,429	52.5	10,597	4,962	5,635	53.2	2,292	1076	1216	53.1	1,376	677	700	50.9	274	180	94	34.3
1986	12,504	5,885	6,619	52.9	10,798	5,018	5,780	53.5	2,219	1047	1173	52.9	1,435	693	742	51.7	270	174	97	35.9
1987	12,767	5,932	6,835	53.5	11,046	5,068	5,978	54.1	2,246	1047	1200	53.4	1,452	693	759	52.3	268	170	98	36.6
1988	13,042	5,997	7,045	54.0	11,304	5,134	6,170	54.6	2,376	1100	1277	53.7	1,472	698	774	52.6	267	167	100	37.5

Note: About 58% of Total Enrollment, 60% of Undergraduate, 70% of Freshman, 37% of Graduate and 90% of First Professional enrollment is full time.

SOURCE: Digest of Education Statistics, 1990, National Center for Education Statistics

TABLE 1-30

FIRST–TIME FRESHMEN AND TOTAL ENROLLMENT IN INSTITUTIONS OF HIGHER EDUATION, BY SEX AND ATTENDANCE STATUS, FALL 1955 TO FALL 1988

(in thousands)

	First–Time Freshmen										Total Enrollment									
		Men				Women						Men				Women				
Year	Total All Freshmen	Total	Full–Time	%M F–T	Part–Time	Total	%Wom	Full–Time	%W F–T	Part–Time	Total Enrollment	Total	Full–Time	%M F–T	Part–Time	Total	%Wom	Full–Time	%W F–T	Part–Time
1955	670	416				254	37.9				2,653	1,733				920	34.7			
1956	718	443				275	38.3				2,918	1,911				1,007	34.5			
1957	724	442				282	39.0				3,324	2,171				1,153	34.7			
1958	775	465				310	40.0													
1959	822	488				334	40.6													
1960	923	540				384	41.6				3,640	2,333				1,307	35.9			
1961	1018	592				426	41.8				4,145	2,586				1,559	37.6			
1962	1031	598				432	41.9													
1963	1046	604				442	42.3				4,780	2,962				1,818	38.0			
1964	1225	702				523	42.7				5,260	3,249				2,031	38.5			
1965	1442	829				613	42.5				5,921	3,630				2,291	38.7			
1966	1554	890				665	42.8				6,390	3,856				2,534	39.7			
1967	1641	931	761	81.7	170	710	43.3	574	80.8	136	6,912	4,133				2,779	40.2			
1968	1893	1082	847	78.3	235	810	42.8	624	77.0	187	7,513	4,478				3,035	40.4			
1969	1967	1118	876	78.4	242	849	43.2	649	76.4	200	8,005	4,746				3,258	40.7			
1970	2063	1152	896	77.8	256	911	44.2	691	75.9	221	8,581	5,044	3,504	40.8	1,540	3,537	41.2	2,312	65.4	1,225
1971	2119	1171	896	76.5	275	949	44.8	710	74.8	238	8,949	5,207				3,742	41.8			
1972	2153	1158	858	74.1	299	995	46.2	716	72.0	279	9,215	5,239				3,976	43.1			
1973	2226	1182	867	73.4	315	1044	46.9	740	70.9	304	9,602	5,371				4,231	44.1			
1974	2366	1244	896	72.0	348	1122	47.4	777	69.3	345	10,224	5,622				4,601	45.0			
1975	2515	1328	942	70.9	386	1187	47.2	821	69.2	366	11,185	6,149	3,927	35.1	2,222	5,036	45.0	2,915	57.9	2,121
1976	2347	1170	855	73.1	316	1177	50.1	808	68.6	369	11,012	5,811				5,201	47.2			
1977	2394	1156	840	72.7	316	1239	51.8	841	67.9	398	11,286	5,789				5,497	48.7			
1978	2390	1142	817	71.5	324	1248	52.2	834	66.8	414	11,260	5,641				5,619	49.9			
1979	2503	1180	840	71.2	340	1323	52.9	866	65.5	457	11,570	5,683				5,887	50.9			
1980	2588	1219	862	70.7	357	1369	52.9	887	64.8	481	12,097	5,874	3,678	30.4	2,196	6,223	51.4	3,409	54.8	2,814
1981	2595	1218	852	70.0	366	1678	64.7	886	52.8	492	12,372	5,975				6,397	51.7			
1982	2505	1199	837	69.8	362	1306	52.1	851	65.2	455	12,426	6,031	3,753	30.2	2,278	6,394	51.5	3,466	54.2	2,927
1983	2444	1159	825	71.2	334	1285	52.6	853	66.4	431	12,465	6,024	3,760	30.2	2,264	6,441	51.7	3,501	54.4	2,940
1984	2357	1112	786	70.7	326	1245	52.8	827	66.4	418	12,242	5,864	3,648	29.8	2,216	6,378	52.1	3,451	54.1	2,927
1985	2292	1076	775	72.0	301	1216	53.1	827	68.0	389	12,247	5,818	3,608	29.5	2,211	6,429	52.5	3,468	53.9	2,961
1986	2219	1047	769	73.4	278	1173	52.9	821	70.0	352	12,504	5,885	3,599	28.8	2,285	6,619	52.9	3,521	53.2	3,098
1987	2246	1047	779	74.4	267	1200	53.4	847	70.6	352	12,767	5,932	3,611	28.3	2,321	6,836	53.5	3,620	53.0	3,214
1988*	2376	1100	806	73.3	294	1277	53.7	889	69.6	388	13,043	5,998	3,660	28.1	2,336	7,045	54.0	3,770	53.5	3,275

* Preliminary data.

SOURCE: Digest of Education Statistics, 1991, U.S. Department of Education

TABLE 1-31

COLLEGE ENROLLMENT RATES OF HIGH SCHOOL GRADUATES, BY SEX AND RACE/ETHNICITY, 1960 – 1989

(numbers in thousands)

	High School Graduates										Number and Percent of Graduates Enrolled in College[1]											
	Total	Men	Women		White[2]		Black[2,3]		Hispanic[3]		Total		Men		Women		White[2]		Black[2,3]		Hispanic[3]	
Year			No.	%Wo	No.	%Wh	No.	%Bl	No.	%Hi	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1960	1679	756	923	55.0	1565	93.2					758	45.1	408	54.0	350	37.9	717	45.8				
1965	2659	1254	1405	52.8	2417	90.9					1354	50.9	718	57.3	636	45.3	1249	51.7				
1970	2757	1343	1414	51.3	2461	89.3					1427	51.8	741	55.2	686	48.5	1280	52.0				
1975	3186	1513	1673	52.5	2825	88.7					1615	50.7	796	52.6	819	49.0	1446	51.2				
1976	2987	1450	1537	51.5	2640	88.4	320	10.7	152	5.1	1458	48.8	685	47.2	773	50.3	1291	48.9	134	41.9	80	52.6
1977	3140	1482	1658	52.8	2768	88.2	335	10.7	156	5.0	1590	50.6	773	52.2	817	49.3	1403	50.7	166	49.6	80	51.3
1978	3161	1485	1676	53.0	2750	87.0	352	11.1	133	4.2	1584	50.1	758	51.0	826	49.3	1378	50.1	161	45.7	57	42.9
1979	3160	1474	1686	53.4	2776	87.8	324	10.3	154	4.9	1559	49.3	743	50.4	816	48.4	1376	49.6	147	45.4	69	44.8
1980	3089	1500	1589	51.4	2682	86.8	361	11.7	129	4.2	1524	49.3	701	46.7	823	51.8	1339	49.9	151	41.8	68	52.7
1981	3053	1490	1563	51.2	2626	86.0	359	11.8	146	4.8	1646	53.9	816	54.8	830	53.1	1434	54.6	154	42.9	76	52.1
1982	3100	1508	1592	51.4	2644	85.3	384	12.4	174	5.6	1568	50.6	739	49.0	829	52.1	1376	52.0	140	36.5	75	43.1
1983	2964	1390	1574	53.1	2496	84.2	392	13.2	138	4.7	1562	52.7	721	51.9	841	53.4	1372	55.0	151	38.5	75	54.3
1984	3012	1429	1583	52.6	2514	83.5	438	14.5	185	6.1	1662	55.2	800	56.0	862	54.5	1455	57.9	176	40.2	82	44.3
1985	2666	1286	1380	51.8	2241	84.1	333	12.5	141	5.3	1539	57.7	754	58.6	785	56.9	1332	59.4	141	42.3	72	51.1
1986	2786	1331	1455	52.2	2307	82.8	386	13.9	169	6.1	1499	53.8	744	55.9	755	51.9	1292	56.0	141	36.5	75	44.4
1987	2647	1278	1369	51.7	2207	83.4	337	12.7	176	6.6	1503	56.8	746	58.4	757	55.3	1249	56.6	175	51.9	59	33.5
1988	2673	1334	1339	50.1	2187	81.8	382	14.3	179	6.7	1575	58.9	761	57.0	814	60.8	1328	60.7	172	45.0	102	57.0
1989	2453	1208	1245	50.8	2051	83.6	337	13.7	168	6.8	1463	59.6	696	57.6	767	61.6	1238	60.4	178	52.8	93	55.4

1 Enrollment in college as of October of each year for individuals age 16 to 24 who graduated from high school during the preceding 12 months.

2 Includes persons of Hispanic origin.

3 Due to the small sample size, data are subject to relatively large sampling errors.

SOURCE: Minorities in Higher Education, **Eighth Annual Status Report** 1989, American Council on Education.

TABLE 1-32

ENROLLED–IN–COLLEGE PARTICIPATION RATES FOR 18–TO–24–YEAR–OLD HIGH SCHOOL GRADUATES BY RACE/ETHNICITY AND SEX, 1976 – 1988
(numbers in thousands)

	ALL RACES		High School Graduates				Enrolled in College					BLACK		High School Graduates				Enrolled in College			
YEAR	Men	Women	Men	%M	Women	%W	Men	%M	Women	%W	YEAR	Men	Wom	Men	%M	Wom	%W	Men	%M	Wom	%W
1976	13,012	13,907	10,312	79.2	11,365	81.7	3,673	35.6	3,508	30.9	1976	1,503	1,813	936	62.3	1,302	71.8	331	35.4	417	32.0
1977	13,218	14,113	10,440	79.0	11,569	82.0	3,712	35.6	3,431	29.7	1977	1,528	1,859	970	63.5	1,317	70.8	309	31.9	413	31.4
1978	13,385	14,262	10,614	79.3	11,694	82.0	3,621	34.1	3,373	28.8	1978	1,554	1,897	956	61.5	1,384	73.0	305	31.9	390	28.2
1979	13,571	14,403	10,657	78.5	11,763	81.7	3,508	32.9	3,482	29.6	1979	1,577	1,934	973	61.7	1,383	71.5	304	31.2	392	28.3
1980	13,652	14,478	10,768	78.9	11,978	82.7	3,604	33.5	3,625	30.3	1980	1,600	1,955	1,055	65.9	1,425	72.9	278	26.4	410	28.8
1981	14,127	14,838	11,052	78.2	12,290	82.8	3,833	34.7	3,741	30.4	1981	1,730	2,049	1,154	66.7	1,526	74.5	325	28.2	424	27.8
1982	14,083	14,763	11,120	79.0	12,171	82.4	3,837	34.5	3,841	31.6	1982	1,786	2,086	1,171	65.6	1,572	75.4	331	28.3	436	27.7
1983	14,003	14,577	10,906	77.9	12,082	82.9	3,820	35.0	3,657	30.3	1983	1,807	2,058	1,202	66.5	1,539	74.8	331	27.5	411	26.7
1984	13,744	14,287	10,914	79.4	11,956	83.7	3,929	36.0	3,662	30.6	1984	1,811	2,052	1,272	70.2	1,613	78.6	367	28.9	410	25.4
1985	13,199	13,923	10,614	80.4	11,736	84.3	3,749	35.3	3,788	32.3	1985	1,720	1,996	1,244	72.3	1,565	78.4	345	27.7	389	24.9
1986	12,921	13,591	10,331	80.0	11,434	84.1	3,649	35.3	3,747	32.8	1986	1,699	1,966	1,225	72.1	1,576	80.2	340	27.8	461	29.3
1987	12,626	13,324	10,030	79.4	11,086	83.2	3,867	38.6	3,826	34.5	1987	1,666	1,937	1,188	71.3	1,550	80.0	377	31.7	445	28.7
1988	12,491	13,242	9,832	78.7	11,068	83.6	3,770	38.3	4,021	36.3	1988	1,653	1,915	1,189	71.9	1,492	77.9	297	25.0	455	30.5
	WHITE											HISPANIC									
1976	11,279	11,840	9,186	81.4	9,860	83.3	3,250	35.4	3,026	30.7	1976	701	850	378	53.9	483	56.8	150	39.7	160	33.1
1977	11,445	11,985	9,263	80.9	10,029	83.7	3,286	35.5	2,923	29.1	1977	754	855	396	52.5	483	56.5	139	35.1	139	28.8
1978	11,572	12,078	9,438	81.6	10,088	83.5	3,195	33.9	2,882	28.6	1978	781	891	420	53.8	516	57.9	126	30.0	128	24.8
1979	11,721	12,174	9,457	80.7	10,157	83.4	3,104	32.8	3,015	29.7	1979	837	917	454	54.2	516	56.3	153	33.7	140	27.1
1980	11,767	12,208	9,488	80.6	10,298	84.4	3,224	34.0	3,110	30.2	1980	971	992	497	51.2	556	56.0	154	31.0	160	28.8
1981	12,040	12,446	9,619	79.9	10,504	84.4	3,340	34.7	3,208	30.5	1981	988	1,064	498	50.4	646	60.7	164	32.9	178	27.6
1982	11,874	12,332	9,611	80.9	10,333	83.8	3,308	34.4	3,285	31.8	1982	944	1,056	519	55.0	634	60.0	141	27.2	196	30.9
1983	11,787	12,112	9,411	79.8	10,233	84.5	3,335	35.4	3,129	30.6	1983	968	1,057	467	48.2	634	60.0	152	32.5	198	31.2
1984	11,521	11,826	9,348	81.1	10,026	84.8	3,406	36.4	3,120	31.1	1984	956	1,061	549	57.4	661	62.3	154	28.1	207	31.3
1985	11,108	11,524	9,077	81.7	9,840	85.4	3,254	35.8	3,247	33.0	1985	1,132	1,091	659	58.2	734	67.3	168	25.5	205	27.9
1986	10,803	11,205	8,771	81.2	9,509	84.9	3,127	35.7	3,112	32.7	1986	1,338	1,175	772	57.7	737	62.7	224	29.0	220	29.9
1987	10,549	10,944	8,498	80.6	9,189	84.0	3,289	38.7	3,192	34.7	1987	1,337	1,256	795	59.5	801	63.8	247	31.1	208	26.0
1988	10,380	10,881	8,268	79.7	9,223	84.8	3,260	39.4	3,399	36.9	1988	1,375	1,267	724	52.7	736	58.1	228	31.5	223	30.3

SOURCE: Digest of Education Statistics, 1990, National Center for Education Statistics

TABLE 1-33

ENROLLMENT OF PERSONS 14 TO 34 YEARS OF AGE* IN INSTITUTIONS OF HIGHER EDUCATION, BY RACE/ETHNICITY, SEX, AND YEAR OF COLLEGE: OCTOBER 1965 TO OCTOBER 1989

Numbers in Thousands

Year	All Students	White			Black			Hispanic Origin#			Year of College				
		Total	Men	Wom	Total	Men	Wom	Total	Men	Wom	First	Second	Third	Fourth	>Four
1965	5,675	5,317	3,326	1,991	274	126	148	---	---	---	1,861	1,256	896	803	859
1970	7,413	6,759	4,066	2,693	522	253	269	---	---	---	2,212	1,739	1,248	1,074	1,140
1975	9,697	8,514	4,771	3,743	948	442	506	411	219	192	2,886	2,376	1,492	1,354	1,589
1978	9,838	8,514	4,508	4,006	1,022	452	569	377	196	181	2,766	2,286	1,658	1,445	1,681
1979	9,978	8,709	4,400	4,309	1,002	434	568	440	226	214	2,885	2,291	1,653	1,458	1,691
1980	10,180	8,875	4,438	4,437	1,007	437	570	443	222	221	2,957	2,411	1,716	1,403	1,692
1981	10,734	9,162	4,620	4,543	1,133	505	628	510	258	252	3,096	2,560	1,799	1,598	1,682
1982	10,919	9,328	4,650	4,679	1,127	482	645	493	216	278	2,990	2,617	1,815	1,688	1,810
1983	10,825	9,242	4,718	4,524	1,102	497	605	523	253	270	2,987	2,624	1,805	1,595	1,814
1984	10,859	9,269	4,709	4,559	1,136	544	594	524	232	292	3,024	2,454	1,981	1,599	1,802
1985	10,863	9,334	4,633	4,701	1,049	458	591	579	280	299	2,956	2,585	1,931	1,642	1,749
1986	10,605	8,943	4,485	4,459	1,138	488	649	677	331	346	2,965	2,564	1,803	1,640	1,633
1987	10,918	9,146	4,563	4,583	1,196	525	671	667	369	298	2,915	2,745	2,011	1,557	1,689
1988	10,937	9,244	4,464	4,780	1,115	426	689	654	313	341	3,131	2,598	1,979	1,631	1,598
1989	11,068	9,376	4,513	4,863	1,141	433	708	640	311	330	2,983	2,680	2,017	1,676	1,711

Percentage Distribution

Year	All Students	White			Black			Hispanic Origin#			Year of College				
		Total	Men	Wom	Total	Men	Wom	Total	Men	Wom	First	Second	Third	Fourth	>Four
1965	100.0	93.7	58.6	35.1	4.8	2.2	2.6				32.8	22.1	15.8	14.1	15.1
1970	100.0	91.2	54.8	36.3	7.0	3.4	3.6				29.8	23.5	16.8	14.5	15.4
1975	100.0	87.8	49.2	38.6	9.8	4.6	5.2	4.2	2.3	2.0	29.8	24.5	15.4	14.0	16.4
1978	100.0	86.5	45.8	40.7	10.4	4.6	5.8	3.8	2.0	1.8	28.1	23.2	16.9	14.7	17.1
1979	100.0	87.3	44.1	43.2	10.0	4.3	5.7	4.4	2.3	2.1	28.9	23.0	16.6	14.6	16.9
1980	100.0	87.2	43.6	43.6	9.9	4.3	5.6	4.4	2.2	2.2	29.0	23.7	16.9	13.8	16.6
1981	100.0	85.4	43.0	42.3	10.6	4.7	5.9	4.8	2.4	2.3	28.8	23.8	16.8	14.9	15.7
1982	100.0	85.4	42.6	42.9	10.3	4.4	5.9	4.5	2.0	2.5	27.4	24.0	16.6	15.5	16.6
1983	100.0	85.4	43.6	41.8	10.2	4.6	5.6	4.8	2.3	2.5	27.6	24.2	16.7	14.7	16.8
1984	100.0	85.4	43.4	42.0	10.5	5.0	5.5	4.8	2.1	2.7	27.8	22.6	18.2	14.7	16.6
1985	100.0	85.9	42.6	43.3	9.7	4.2	5.4	5.3	2.6	2.8	27.2	23.8	17.8	15.1	16.1
1986	100.0	84.3	42.3	42.0	10.7	4.6	6.1	6.4	3.1	3.3	28.0	24.2	17.0	15.5	15.4
1987	100.0	83.8	41.8	42.0	11.0	4.8	6.1	6.1	3.4	2.7	26.7	25.1	18.4	14.3	15.5
1988	100.0	84.5	40.8	43.7	10.2	3.9	6.3	6.0	2.9	3.1	28.6	23.8	18.1	14.9	14.6
1989	100.0	84.7	40.8	43.9	10.3	3.9	6.4	5.8	2.8	3.0	27.0	24.2	18.2	15.1	15.5

* Totals differ from those shown in other tables. This table presents data collected in sample surveys of households instead of institutions.

Persons of Hispanic origin may be of any race.

Source: National Center for Education Statistics as published in the Chronicle of Higher Education, January, 22, 1992, p. 37 and earlier issues.

TABLE 1-34

ENROLLMENT IN HIGHER EDUCATION INSTITUTIONS BY SEX AND RACE/ETHNIC GROUP, FALL 1976 – 1990

(Numbers in thousands)

	All Students			White			Black			Hispanic			Asian			American Indian			Foreign		
YEAR	Total	Men	Women	Total	Men	Women	Total	Men	Wom	Tota	Men	Wom	Total	Men	Wom	Tota	Men	Wom	Total	Men	Wom
1976	10,986	5,794	5,191	9,076	4,814	4,262	1,033	470	563	384	210	174	198	108	89	76	39	38	219	154	65
1978	11,231	5,621	5,609	9,194	4,613	4,581	1,054	453	601	417	213	205	235	126	109	78	37	41	253	180	73
1980	12,087	5,868	6,219	9,833	4,773	5,060	1,107	464	643	472	232	240	286	151	135	84	38	46	305	211	94
1982	12,388	5,999	6,389	9,997	4,830	5,167	1,101	458	644	519	252	267	351	189	162	88	40	48	331	230	101
1984	12,235	5,859	6,376	9,815	4,690	5,125	1,076	437	639	535	254	281	390	210	180	84	38	46	335	231	104
1986	12,504	5,885	6,619	9,921	4,647	5,273	1,082	436	646	618	290	328	448	239	209	90	39	51	345	233	112
1988	13,043	5,998	7,045	10,283	4,712	5,572	1,130	443	687	680	310	370	497	259	237	93	39	53	361	235	126
1990	13,710	6,242	7,472	10,675	4,841	5,834	1,223	476	747	758	344	414	555	287	268	103	43	60	397	248	149
	Percentages of Total Students																				
1976	100	52.7	47.3	82.6	43.8	38.8	9.4	4.3	5.1	3.5	1.9	1.6	1.8	1.0	0.8	0.7	0.4	0.3	2.0	1.4	0.6
1978	100	50.0	49.9	81.9	41.1	40.8	9.4	4.0	5.4	3.7	1.9	1.8	2.1	1.1	1.0	0.7	0.3	0.4	2.3	1.6	0.6
1980	100	48.5	51.5	81.4	39.5	41.9	9.2	3.8	5.3	3.9	1.9	2.0	2.4	1.2	1.1	0.7	0.3	0.4	2.5	1.7	0.8
1982	100	48.4	51.6	80.7	39.0	41.7	8.9	3.7	5.2	4.2	2.0	2.2	2.8	1.5	1.3	0.7	0.3	0.4	2.7	1.9	0.8
1984	100	47.9	52.1	80.2	38.3	41.9	8.8	3.6	5.2	4.4	2.1	2.3	3.2	1.7	1.5	0.7	0.3	0.4	2.7	1.9	0.9
1986	100	47.1	52.9	79.3	37.2	42.2	8.7	3.5	5.2	4.9	2.3	2.6	3.6	1.9	1.7	0.7	0.3	0.4	2.8	1.9	0.9
1988	100	46.0	54.0	78.8	36.1	42.7	8.7	3.4	5.3	5.2	2.4	2.8	3.8	2.0	1.8	0.7	0.3	0.4	2.8	1.8	1.0
1990	100	45.5	54.5	77.9	35.3	42.6	8.9	3.5	5.4	5.5	2.5	3.0	4.0	2.1	2.0	0.8	0.3	0.4	2.9	1.8	1.1
	Percentages of Sub–group																				
1976	100	52.7	47.3	100	53.0	47.0	100	45.5	54.5	100	54.7	45.3	100	54.5	44.9	100	51.3	50.0	100	70.3	29.7
1978	100	50.0	49.9	100	50.2	49.8	100	43.0	57.0	100	51.1	49.2	100	53.6	46.4	100	47.4	52.6	100	71.1	28.9
1980	100	48.5	51.5	100	48.5	51.5	100	41.9	58.1	100	49.2	50.8	100	52.8	47.2	100	45.2	54.8	100	69.2	30.8
1982	100	48.4	51.6	100	48.3	51.7	100	41.6	58.5	100	48.6	51.4	100	53.8	46.2	100	45.5	54.5	100	69.5	30.5
1984	100	47.9	52.1	100	47.8	52.2	100	40.6	59.4	100	47.5	52.5	100	53.8	46.2	100	45.2	54.8	100	69.0	31.0
1986	100	47.1	52.9	100	46.8	53.1	100	40.3	59.7	100	46.9	53.1	100	53.3	46.7	100	43.3	56.7	100	67.5	32.5
1988	100	46.0	54.0	100	45.8	54.2	100	39.2	60.8	100	45.6	54.4	100	52.1	47.7	100	41.9	57.0	100	65.1	34.9
1990	100	45.5	54.5	100	45.3	54.7	100	38.9	61.1	100	45.4	54.6	100	51.7	48.3	100	41.7	58.3	100	62.5	37.5

Note Totals may not check due to rounding

SOURCE: National Center for Education Statistics as published in the Chronicle of Higher Education, January 22, 1992, p. 37 and earlie

TABLE 1-35

ENROLLMENT IN INSTITUTIONS OF HIGHER EDUCATION BY TYPE OF INSTITUTION, SEX AND RACE/ETHNICITY, FALL 1978 – FALL 1990 (Numbers in thousands)

	Total	White	%Wh	Minority Total	%M	Black	%B	Hispanic	%H	Asian	%A	American Indian	%I	Foreign	%F
All Institutions								**Total**							
1978	11,231	9,194	81.9	1,776	15.8	1,054	9.4	417	3.7	235	2.0	78	0.6	253	1.3
1980	12,087	9,833	81.4	1,937	16.0	1,107	9.2	472	3.9	286	2.4	84	0.6	305	1.4
1982	12,388	9,997	80.7	2,050	16.5	1,101	8.9	519	4.2	351	2.8	88	0.6	331	1.7
1984	12,235	9,815	80.2	2,083	17.0	1,076	8.8	535	4.4	390	3.2	84	0.7	335	1.8
1986	12,504	9,921	79.3	2,226	17.8	1,082	8.7	618	4.9	448	3.6	90	0.6	345	1.7
1988	13,043	10,283	78.8	2,400	18.4	1,130	8.7	680	5.2	497	3.8	93	0.7	361	2.8
1990	13,710	10,675	77.9	2,639	19.2	1,223	8.9	758	5.5	555	4.0	103	0.8	379	2.8
Total	87,198	69,718	80.0	15,111	17.3	7,773	8.9	3,999	4.6	2,762	3.2	620	0.7	2,309	2.6
								Men							
1978	5,621	4,613	82.1	796	14.2	453	8.1	213	3.8	126	2.2	37	0.1	180	1.3
1980	5,868	4,773	81.3	851	14.5	464	7.9	232	4.0	151	2.6	38	0.1	211	1.4
1982	5,999	4,830	80.5	903	15.1	458	7.6	252	4.2	189	3.2	40	0.1	230	1.6
1984	5,859	4,690	80.0	906	15.5	437	7.5	254	4.3	210	3.6	38	0.1	231	1.8
1986	5,885	4,647	79.0	970	16.5	436	7.4	290	4.9	239	4.1	39	0.1	233	2.0
1988	5,998	4,712	78.6	1,051	17.5	443	7.4	310	5.2	259	4.3	39	0.7	235	3.9
1990	6,242	4,841	77.6	1,210	19.4	476	7.6	344	5.5	287	4.6	103	1.7	248	4.0
Total	41,472	33,106	79.8	6,687	16.1	3,167	7.6	1,895	4.6	1,461	3.5	334	0.8	1,568	3.8
								Women							
1978	5,609	4,581	81.7	916	16.3	601	10.7	205	3.7	109	2.0	41	0.0	73	0.1
1980	6,219	5,060	81.4	1,019	16.4	643	10.3	240	3.9	135	2.2	46	0.0	94	0.0
1982	6,389	5,167	80.9	1,074	16.8	644	10.1	267	4.2	162	2.5	48	0.0	101	0.0
1984	6,376	5,125	80.4	1,101	17.3	639	10.0	281	4.4	180	2.8	46	0.0	104	0.0
1986	6,619	5,273	79.7	1,184	17.9	646	9.8	328	5.0	209	3.2	51	0.0	112	0.0
1988	7,045	5,572	79.1	1,347	19.1	687	9.8	370	5.3	237	3.4	53	0.8	126	1.8
1990	7,472	5,834	78.1	1,480	19.9	747	10.0	414	5.5	268	3.6	60	0.8	149	2.0
Total	45,729	36,612	80.1	8,130	17.8	4,607	10.1	2,105	4.6	1,300	2.8	345	0.8	759	1.7
4–Year Institutions								**Total**							
1978	7,203	6,027	83.7	940	13.1	612	8.5	190	2.6	138	1.9	35	0.0	201	0.0
1980	7,565	6,275	82.9	1,013	13.4	634	8.4	217	2.9	162	2.1	37	0.0	241	0.0
1982	7,648	6,306	82.5	1,034	13.5	612	8.0	229	3.0	193	2.5	39	0.0	270	0.0
1984	7,708	6,301	81.7	1,086	14.1	617	8.0	246	3.2	223	2.9	38	0.0	282	0.0
1986	7,824	6,337	81.0	1,155	14.8	615	7.9	278	3.6	262	3.3	40	0.0	292	0.0
1988	8,175	6,582	80.5	1,291	15.8	656	8.0	296	3.6	297	3.6	42	0.5	302	3.7
1990	8,207	6,757	82.3	1,450	17.7	715	8.7	344	4.2	343	4.2	48	0.6	322	3.9
Total	54,330	44,585	82.1	7,969	14.7	4,461	8.2	1,800	3.3	1,618	3.0	279	0.5	1,910	3.5
2–Year Institutions								**Total**							
1978	4,028	3,167	78.6	767	19.0	443	11.0	227	5.6	97	2.4	43	0.0	52	0.0
1980	4,521	3,558	78.7	851	18.8	472	10.4	255	5.6	124	2.7	47	0.0	64	0.0
1982	4,740	3,692	77.9	938	19.8	489	10.3	291	6.1	158	3.3	49	0.0	61	0.0
1984	4,527	3,514	77.6	915	20.2	459	10.1	289	6.4	167	3.7	46	0.0	53	0.0
1986	4,680	3,584	76.6	993	21.2	467	10.0	340	7.3	186	4.0	51	0.0	53	0.0
1988	4,868	3,702	76.0	1,106	22.7	473	9.7	384	7.9	199	4.1	50	1.0	60	1.2
1990	5,107	3,918	76.7	1,189	23.3	509	10.0	414	8.1	212	4.2	54	1.1	75	1.5
Total	32,471	25,135	77.4	6,759	20.8	3,312	10.2	2,200	6.8	1,143	3.5	340	1.0	418	1.3

Note: Details may not add to totals because of rounding.

SOURCE: National Center for Education Statistics, Department fo Education

TABLE 1-36

TOTAL ENROLLMENT IN INSTITUTIONS OF HIGHER EDUCATION BY LEVEL OF STUDY AND RACE/ETHNICITY OF STUDENT, FALL 1976 – FALL 1990

(Numbers in thousands)

	Total	White	% W	Minority Total	% M	Black	% B	His–panic	% H	Asian or Pac Is	% A	American Indian	% I	Foreign No.	%F
Undergraduates															
1976	9,520	7,827	82.2	1,550	16.3	950	10.0	357	3.8	173	1.8	70	0.7	142	1.5
1978	9,757	7,946	81.4	1,641	16.8	975	10.0	388	4.0	206	2.1	72	0.7	169	1.7
1980	10,560	8,556	81.0	1,798	17.0	1,028	9.7	438	4.1	253	2.4	79	0.7	208	2.0
1982	10,875	8,749	80.5	1,908	17.5	1,028	9.5	485	4.5	313	2.9	82	0.8	220	2.0
1984	10,610	8,484	80.0	1,911	18.0	995	9.4	495	4.7	343	3.2	78	0.7	216	2.0
1986	10,798	8,558	79.3	2,035	18.8	996	9.2	563	5.2	393	3.6	83	0.8	205	1.9
1988	11,304	8,907	78.8	2,193	19.4	1,039	9.2	631	5.6	437	3.9	86	0.8	205	1.8
1990	11,637	9,231	79.3	2,406	20.7	1,124	9.7	702	6.0	485	4.2	95	0.8	226	1.9
Total	85,061	68,258	80.2	15,442	18.2	8,135	9.6	4,059	4.8	2,603	3.1	645	0.8	1,591	1.9
Graduates															
1976	1,221	1,030	84.4	119	9.7	72	5.9	22	1.8	21	1.7	4	0.3	73	6.0
1978	1,219	1,019	83.6	120	9.8	68	5.6	24	2.0	24	2.0	4	0.3	80	6.6
1980	1,250	1,030	82.4	125	10.0	66	5.3	27	2.2	28	2.2	4	0.3	94	7.5
1982	1,235	1,002	81.1	123	10.0	61	4.9	27	2.2	30	2.4	5	0.4	108	8.7
1984	1,344	1,087	80.9	141	10.5	67	5.0	32	2.4	37	2.8	5	0.4	115	8.6
1986	1,435	1,133	79.0	166	11.6	72	5.0	46	3.2	43	3.0	5	0.3	136	9.5
1988	1,472	1,153	78.3	167	11.3	76	5.2	39	2.6	46	3.1	6	0.4	151	10.3
1990	1,409	1,221	86.7	188	13.3	84	6.0	46	3.3	52	3.7	6	0.4	165	11.7
Total	10,585	8,675	82.0	1,149	10.9	566	5.3	263	2.5	281	2.7	39	0.4	922	8.7
First–professional															
1976	244	220	90.2	21	8.6	11	4.5	5	2.0	4	1.6	1	0.4	3	1.2
1978	255	229	89.8	22	8.6	11	4.3	5	2.0	5	2.0	1	0.4	3	1.2
1980	277	248	89.5	27	9.7	13	4.7	7	2.5	6	2.2	1	0.4	3	1.1
1982	278	246	88.5	29	10.4	13	4.7	7	2.5	8	2.9	1	0.4	3	1.1
1984	278	243	87.4	31	11.2	13	4.7	8	2.9	9	3.2	1	0.4	3	1.1
1986	270	231	85.6	35	13.0	14	5.2	9	3.3	11	4.1	1	0.4	4	1.5
1988	267	223	83.5	38	14.2	14	5.2	9	3.4	14	5.2	1	0.4	5	1.9
1990	267	222	83.1	45	16.9	16	6.0	10	3.7	18	6.7	1	0.4	5	1.9
Total	2,136	1,862	87.2	248	11.6	105	4.9	60	2.8	75	3.5	8	0.4	29	1.4
Total All Enrollments															
1976	10,985	9,077	82.6	1,690	15.4	1,033	9.4	384	3.5	198	1.8	75	0.7	218	2.0
1978	11,231	9,194	81.9	1,783	15.9	1,054	9.4	417	3.7	235	2.1	77	0.7	252	2.2
1980	12,087	9,834	81.4	1,950	16.1	1,107	9.2	472	3.9	287	2.4	84	0.7	305	2.5
1982	12,388	9,997	80.7	2,060	16.6	1,102	8.9	519	4.2	351	2.8	88	0.7	331	2.7
1984	12,232	9,814	80.2	2,083	17.0	1,075	8.8	535	4.4	389	3.2	84	0.7	334	2.7
1986	12,503	9,922	79.4	2,236	17.9	1,082	8.7	618	4.9	447	3.6	89	0.7	345	2.8
1988	13,043	10,283	78.8	2,398	18.4	1,129	8.7	679	5.2	497	3.8	93	0.7	361	2.8
1990	13,710	10,674	77.9	2,639	19.2	1,224	8.9	758	5.5	555	4.0	102	0.7	396	2.9
Total	97,782	78,795	80.6	16,839	17.2	8,806	9.0	4,382	4.5	2,959	3.0	692	0.7	2,542	2.6

Note: Because of underreporting and nonreporting of racial/ethnic data, some data were estimated.
Due to rounding, detail may not add to totals.

Source: The American Freshman; 1982–91, Cooperative Institutional Research Program, American Council on Education and University of California, Los Angeles

TABLE 1-37

PERCENT OF FRESHMEN WITH DISABILITIES, BY SEX AND DISABILITY, 1983–91

Fall	Hearing	Speech	Ortho-pedic	Learning Disabled	Health Related	Partially Sighted or Blind	Other	Total
Women								
1983	0.7	0.2	0.9	0.5	0.9	2.1	1.1	6.4
1984	0.8	0.2	0.9	0.7	1.1	1.7	1.1	6.5
1985	0.7	0.1	0.9	0.9	1.4	2.0	1.0	7.0
1986	0.6	0.1	0.7	0.5	0.8	1.6	0.7	5.0
1987	0.6	0.1	0.8	0.8	1.0	1.8	0.9	6.0
1988	0.7	0.2	1.0	0.9	1.3	1.7	1.3	7.1
1991	0.8	0.3	1.1	1.8	1.4	2.2	1.4	9.0
Average	0.7	0.2	0.9	0.9	1.1	1.9	1.1	6.7
Men								
1983	0.7	0.3	0.9	0.8	0.8	2.2	1.3	7.0
1984	1.0	0.4	1.0	1.2	1.0	2.2	1.5	8.3
1985	1.1	0.4	0.9	1.3	1.1	2.2	1.4	8.4
1986	0.7	0.2	0.7	1.1	0.8	1.8	1.1	6.4
1987	0.8	0.3	0.8	1.6	1.0	2.1	1.2	7.8
1988	0.9	0.4	0.9	1.4	1.0	2.1	1.4	8.1
1991	1.0	0.7	1.3	2.7	1.1	2.2	1.8	10.8
Average	0.9	0.4	0.9	1.4	1.0	2.1	1.4	8.1
Diference W–M	−0.19	−0.21	−0.03	−0.57	0.16	−0.24	−0.31	−1.40

Note: Data not reported in 1989 and 1990

SOURCE: Digest of Education Statistics, 1990, National Center for Education Statistics

TABLE 1-38

TOTAL ENROLLMENT IN SELECTED MAJOR FIELDS OF STUDY IN 4–YEAR INSTITUTIONS OF HIGHER EDUCATION, BY SEX FALL 1976 TO FALL 1988

	Total Enroll-ment	Agri. & Natrual Resour.	Architect. & Envt. Design	Business & Mgmt.	Dentistry	Engin-eering	Law	Life Sciences	Math-ematics	Medicine	Physical Sciences	Veter-inary Medicine	All Other
Total													
1976	7,126,515	124,903	56,149	951,945	20,272	374,815	119,581	289,906	---	58,085	146,025	6,126	4,976,708
1978	7,230,380	125,312	57,673	1,112,511	21,793	440,038	118,298	272,560	---	66,713	148,432	7,186	4,859,864
1980	7,570,608	113,376	59,660	1,240,258	22,668	503,960	118,993	241,807	---	74,132	154,092	8,164	5,033,498
1984	7,622,667	---	56,896	1,292,868	19,997	514,257	117,673	233,333	96,772	67,877	143,514	9,190	5,070,290
1986	7,823,963	---	56,756	1,270,187	17,773	485,857	105,965	218,001	89,434	65,462	128,979	8,707	5,376,842
1988	8,175,008	---	61,767	1,348,146	15,362	447,820	114,338	223,022	82,226	64,199	121,172	8,504	5,688,452
Men													
1976	3,754,579	88,235	42,106	726,011	18,735	392,871	82,302	154,971	---	51,241	114,166	4,762	2,077,179
1980	3,827,341	78,158	42,302	742,859	18,812	441,965	78,589	132,067	---	55,060	114,919	4,980	2,117,650
1984	3,797,607	---	37,632	715,415	15,217	439,444	71,443	118,651	56,041	46,492	105,412	4,762	2,187,098
1986	3,823,583	---	36,878	690,588	12,916	414,973	62,789	106,044	51,086	43,660	92,483	4,092	2,306,054
1988	3,912,277	---	36,481	736,577	10,639	381,256	66,043	109,034	46,569	41,791	86,274	3,661	2,391,952
Women													
1976	3,475,801	37,077	15,567	384,500	3,058	47,167	35,996	117,589	---	15,472	34,266	2,424	2,782,685
1980	3,743,267	35,218	17,358	497,399	3,856	61,995	40,424	109,740	---	19,072	39,173	3,184	2,915,848
1984	3,825,060	---	19,264	577,453	4,780	74,813	46,230	114,682	40,731	21,385	38,102	4,428	2,883,192
1986	4,000,380	---	19,878	579,599	4,857	70,884	43,176	109,957	38,348	21,782	36,496	4,615	3,070,788
1988	4,262,731	---	23,286	611,569	4,723	66,564	48,295	113,988	35,657	22,408	34,898	4,843	3,296,500
%Women													
1976	48.1	29.6	27.0	34.6	14.0	10.7	30.4	43.1	---	23.2	23.1	33.7	57.3
1980	49.4	31.1	29.1	40.1	17.0	12.3	34.0	45.4	---	25.7	25.4	39.0	57.9
1984	50.2	---	33.9	44.7	23.9	14.5	39.3	49.1	42.1	31.5	26.5	48.2	56.9
1986	51.1	---	35.0	45.6	27.3	14.6	40.7	50.4	42.9	33.3	28.3	53.0	57.1
1988	52.1	---	37.7	45.4	30.7	14.9	42.2	51.1	43.4	34.9	28.8	56.9	58.0

SOURCE: *Digest of Education Statistics 1990,* U.S. Department of Education

TABLE 1-39

TOTAL ENROLLMENT IN SELECTED FIELDS IN 4-YEAR INSTITUTIONS BY LEVEL, SEX, AND ATTENDANCE STATUS, FALL 1988

Level, sex, and attendance status of student	All fields	Architecture and environmental design	Business and management	Dentistry	Engineering	Law	Life sciences	Mathematics	Medicine	Physical sciences	Veterinary medicine	All other fields [2]
1	2	3	4	5	6	7	8	9	10	11	12	13
All students	**8,175,008**	**61,767**	**1,348,146**	**15,362**	**447,820**	**114,338**	**223,022**	**82,226**	**64,199**	**121,172**	**8,504**	**5,688,452**
Men	3,912,277	38,481	736,577	10,639	381,256	66,043	109,034	46,569	41,791	86,274	3,661	2,391,952
Full-time	2,842,564	33,203	519,070	10,590	300,787	56,162	92,030	36,311	41,403	68,506	3,625	1,680,877
Part-time	1,069,713	5,278	217,507	49	80,469	9,881	17,004	10,258	388	17,768	36	711,075
Women	4,262,731	23,286	611,569	4,723	66,564	48,295	113,988	35,657	22,408	34,898	4,843	3,296,500
Full-time	2,845,747	18,830	407,932	4,697	53,608	41,127	94,629	28,506	22,186	27,772	4,795	2,141,665
Part-time	1,416,984	4,456	203,637	26	12,956	7,168	19,359	7,151	222	7,126	48	1,154,835
Undergraduate students	6,436,050	50,050	1,116,496	—	354,447	—	180,811	65,250	—	79,562	—	4,589,434
Men	3,047,819	31,015	589,602	—	299,888	—	85,713	35,258	—	54,731	—	1,951,612
Full-time	2,387,188	27,197	467,804	—	256,063	—	75,490	29,211	—	46,034	—	1,485,389
Part-time	660,631	3,818	121,798	—	43,825	—	10,223	6,047	—	8,697	—	466,223
Women	3,388,231	19,035	526,894	—	54,559	—	95,098	29,992	—	24,831	—	2,637,822
Full-time	2,506,791	15,464	382,810	—	47,357	—	82,132	25,545	—	20,918	—	1,932,565
Part-time	881,440	3,571	144,084	—	7,202	—	12,966	4,447	—	3,913	—	705,257
Graduate students	1,471,862	11,677	231,358	—	93,372	—	42,211	16,976	—	41,610	—	1,034,658
Men	697,773	7,439	146,774	—	81,367	—	23,321	11,311	—	31,543	—	396,018
Full-time	304,194	5,979	51,104	—	44,724	—	16,540	7,100	—	22,472	—	156,275
Part-time	393,579	1,460	95,670	—	36,643	—	6,781	4,211	—	9,071	—	239,743
Women	774,089	4,238	84,584	—	12,005	—	18,890	5,665	—	10,067	—	638,640
Full-time	248,302	3,353	25,053	—	6,251	—	12,497	2,961	—	6,854	—	191,333
Part-time	525,787	885	59,531	—	5,754	—	6,393	2,704	—	3,213	—	447,307
First-professional students	267,096	40	292	15,362	1	114,338	—	—	64,199	—	8,504	64,360
Men	166,685	27	201	10,639	1	66,043	—	—	41,791	—	3,661	44,322
Full-time	151,182	27	162	10,590	—	56,162	—	—	41,403	—	3,625	39,213
Part-time	15,503	—	39	49	1	9,881	—	—	388	—	36	5,109
Women	100,411	13	91	4,723	—	48,295	—	—	22,408	—	4,843	20,038
Full-time	90,654	13	69	4,697	—	41,127	—	—	22,186	—	4,795	17,767
Part-time	9,757	—	22	26	—	7,168	—	—	222	—	48	2,271

[1] Preliminary data.
[2] Includes students whose major field of study was not reported.
—Data not reported or not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), "Fall Enrollment, 1988" survey. (This table was prepared November 1989.)

SOURCE: *Open Doors 1990-91,* Institute of International Education, from tables published in *THE CHRONICLE OF HIGHER EDUCATION,* October 23, 1991

TABLE 1-40

FOREIGN STUDENTS IN U.S. INSTITUTIONS, 1990-1991

DISTRIBUTION BY FIELD OF STUDY

Field of study	1989-90 Number of foreign students	1989-90 Proportion of foreign students	1990-91 Number of foreign students	1990-91 Proportion of foreign students
Agriculture	8,310	2.1%	8,080	2.0%
Allied health	3,860	1.0	3,500	0.9
Architecture & environmental design	5,670	1.5	5,600	1.4
Area & ethnic studies	1,520	0.4	1,350	0.3
Business & management	75,570	19.5	79,670	19.5
Communications	6,040	1.6	6,670	1.6
Communications technologies	570	0.1	410	0.1
Computer & information sciences	27,660	7.2	27,900	6.8
Education	11,210	2.9	12,280	3.0
Engineering	73,420	19.0	73,620	18.0
English language	19,120	5.0	19,300	4.7
Foreign languages	4,080	1.0	4,030	1.0
Health sciences	11,490	3.0	13,060	3.2
Home economics	1,980	0.5	1,980	0.5
Industrial arts	590	0.1	1,190	0.3
Law	2,200	0.6	2,630	0.7
Letters	6,270	1.6	6,300	1.5
Liberal & general studies	15,240	3.9	16,570	4.1
Library & archival sciences	850	0.2	750	0.2
Life sciences	12,610	3.2	14,160	3.5
Mathematics	8,550	2.2	8,940	2.2
Military sciences	140	—	150	—
Military technologies	70	—	0	—
Multi / interdisciplinary studies	1,970	0.5	2,900	0.7
Parks & recreation	230	0.1	260	0.1
Personal & social development	2,540	0.7	2,550	0.6
Philosophy & religion	1,930	0.5	2,040	0.5
Physical sciences	18,850	4.9	19,820	4.9
Protective services	550	0.1	580	0.1
Psychology	3,900	1.0	4,380	1.1
Public affairs	3,260	0.8	2,690	0.7
Science technologies	1,450	0.4	1,300	0.3
Social sciences	19,120	5.0	21,550	5.3
Theology	2,950	0.8	3,470	0.9
Visual & performing arts	11,190	2.9	12,250	3.0
Vocational home economics	280	0.1	320	0.1
Undeclared	21,610	5.6	25,280	6.2
Total	386,850	100.0%	407,530	100.0%

COUNTRY OF ORIGIN

Rank	Country or territory	Students	Rank	Country or territory	Students
1.	China	39,600	35.	Norway	2,350
2.	Japan	36,610	36.	Sri Lanka	2,320
3.	Taiwan	33,530	37.	Nicaragua	2,290
4.	India	28,860	38.	Trinidad & Tobago	2,240
5.	Republic of Korea	23,360	39.	South Africa	2,170
6.	Canada	18,350	40.	Netherlands	2,030
7.	Malaysia	13,610	40.	Sweden	2,030
8.	Hong Kong	12,630	42.	Panama	2,010
9.	Indonesia	9,520	43.	Ethiopia	2,000
10.	Pakistan	7,730	44.	Argentina	1,910
11.	United Kingdom	7,300	44.	Australia	1,910
12.	Thailand	7,090	46.	Bahamas	1,850
13.	Germany	7,000	47.	Egypt	1,780
14.	Mexico	6,740	48.	Cyprus	1,710
15.	Iran	6,260	49.	Kuwait	1,620
16.	France	5,630	50.	Haiti	1,450
17.	Singapore	4,500	51.	Vietnam	1,400
18.	Greece	4,360	52.	United Arab Emirates	1,350
19.	Jordan	4,320	53.	Switzerland	1,340
20.	Spain	4,300	54.	Honduras	1,310
21.	Philippines	4,270	55.	Syria	1,280
22.	Turkey	4,080	56.	Ireland	1,240
23.	Brazil	3,900	56.	Poland	1,240
23.	Lebanon	3,900	58.	El Salvador	1,210
25.	Nigeria	3,710	58.	U.S.S.R.	1,210
26.	Saudi Arabia	3,590	60.	Yugoslavia	1,200
27.	Colombia	3,180	61.	Ecuador	1,130
28.	Israel	2,980	62.	Chile	1,100
29.	Venezuela	2,890	62.	Costa Rica	1,100
30.	Peru	2,800	62.	Ghana	1,100
31.	Bangladesh	2,530	65.	Cuba	1,080
32.	Jamaica	2,450	66.	Morocco	1,070
33.	Italy	2,390	67.	Cameroon	1,020
34.	Kenya	2,360			

Note: Includes only countries with over 1,000 students in U.S. institutions.

SOURCE: Graduate Record Examinations Board by ETS, *Sex, Race, Ethnicity, and Performance on the GRE General Test, 1991*

TABLE 1-41
GRE GENERAL TEST SCORES BY ETHNIC GROUP AND SEX, 1978-88
(U.S. Citizens only)

			GRE General Test Score Information					
	Examinees		Verbal		Quantitative		Analytical	
Group[1]	Number	Percent[2]	Mean	SD	Mean	SD	Mean	SD
Amer Indian	1,000	<1	464	107	470	133	485	123
Men	421	<1	480	108	513	138	500	123
Women	579	<1	452	105	440	120	474	122
Asian/Pac Amer	6,133	3	480	127	612	131	539	134
Men	3,239	2	472	130	644	120	542	136
Women	2,894	1	488	122	575	134	536	132
Black/Afr Amer	12,592	6	391	97	394	118	406	106
Men	4,189	2	401	102	427	130	416	113
Women	8,403	4	386	94	378	108	401	103
Mexican Amer	2,933	1	444	104	461	134	461	119
Men	1,355	<1	457	104	495	139	472	122
Women	1,578	<1	433	103	432	122	451	116
Puerto Rican	1,890	<1	396	100	444	132	422	117
Men	833	<1	407	102	480	140	433	122
Women	1,057	<1	388	97	416	119	414	113
Other Hispanic	2,335	1	470	110	502	138	494	125
Men	1,050	<1	486	115	552	137	513	127
Women	1,285	<1	456	104	462	125	478	121
White	173,674	86	520	108	546	128	557	118
Men	74,297	37	532	109	591	127	571	120
Women	99,377	49	512	107	513	118	546	116
Other	2,527	1	528	130	549	142	542	133
Men	1,360	<1	537	129	587	137	557	131
Women	1,167	<1	517	130	505	135	525	134
Total	203,084	100	508	114	536	134	543	125
Men	86,744	43	520	114	582	134	558	126
Women	116,340	57	499	112	502	124	532	122

Note: A total of 221,958 U.S. citizens took the GRE General Test in 1987-88 and 91% responded to questions in this table.

[1]Ethnic groups are defined as follows: Amer Indian–American Indian, Inuit, or Aleut; Asian/Pac Amer–Asian or Pacific American; Black/Afr Amer–Black or African American; Mexican Amer–Mexican American or Chicano; Puerto Rican–same; Other Hispanic–Other Hispanic or Latin American; White–same; Other–same.

[2]Percentages in this table are based on the column total.

Source: *Examinee and score trends for the GRE General Test: 1977-78, 1982-83, 1986-87, and 1987-88* (1990)

SOURCE: Digest of Education Statistics, 1990, National Center for Education Statistics

TABLE 1-42

TOTAL GRADUATE ENROLLMENT IN INSTITUTIONS OF HIGHER EDUCATION, BY SEX AND ATTENDANCE STATUS: FALL 1969 TO FALL 1988

(In thousands)

		Full-	Part-	Men					Women				
Year	Total	Time	Time	Total	%Men	F-T	%F-T	P-T	Total	%Wom	F-T	%F-T	P-T
1969	955	363	593	590	61.8	252	42.7	338	366	38.3	111	30.3	255
1970	1031	379	651	630	61.1	264	41.9	366	400	38.8	115	28.8	285
1971	1012	388	621	615	60.8	269	43.7	346	394	38.9	119	30.2	275
1972	1066	394	671	626	58.7	268	42.8	358	439	41.2	126	28.7	313
1973	1123	410	715	648	57.7	273	42.1	375	477	42.5	137	28.7	340
1974	1190	427	762	663	55.7	276	41.6	387	526	44.2	151	28.7	375
1975	1263	453	810	700	55.4	290	41.4	410	563	44.6	163	29.0	400
1976	1333	463	870	714	53.6	287	40.2	427	619	46.4	176	28.4	443
1977	1319	473	845	700	53.1	289	41.3	411	617	46.8	184	29.8	434
1978	1312	468	844	682	52.0	280	41.1	402	630	48.0	188	29.8	442
1979	1309	476	833	669	51.1	280	41.9	389	640	48.9	196	30.6	444
1980	1343	485	860	675	50.3	281	41.6	394	670	49.9	204	30.4	466
1981	1343	484	859	674	50.2	277	41.1	397	669	49.8	207	30.9	462
1982	1322	485	838	670	50.7	280	41.8	390	653	49.4	205	31.4	447
1983	1340	497	843	677	50.5	286	42.2	391	663	49.5	211	31.8	452
1984	1345	501	844	672	50.0	286	42.6	386	673	50.0	215	31.9	459
1985	1376	509	867	677	49.2	289	42.7	388	700	50.9	220	31.4	479
1986	1435	522	913	693	48.3	294	42.4	399	742	51.7	228	30.7	514
1987	1452	527	925	693	47.7	294	42.4	400	759	52.3	233	30.7	525
1988*	1472	552	919	698	47.4	304	43.6	394	774	52.6	248	32.0	526

* Preliminary data. NOTE.--Because of rounding, details may not add to totals.

TABLE 1-43

TOTAL FIRST-PROFESSIONAL ENROLLMENT IN INSTITUTIONS OF HIGHER EDUCATION, BY SEX AND ATTENDANCE STATUS: FALL 1969 TO FALL 1988

		Full-	Part-	Men					Women				
Year	Total	Time	Time	Total	%Men	F-T	%F-T	P-T	Total	%Wom	F-T	%F-T	P-T
1969	164,737	143,081	21,656	148,926	90.4	131,368	88.2	17,558	15,811	9.6	11,713	74.1	4,098
1970	173,411	157,384	16,027	158,649	91.5	144,270	90.9	14,379	14,762	8.5	13,114	88.8	1,648
1971	192,668	176,224	16,444	174,058	90.3	159,386	91.6	14,672	18,610	9.7	16,838	90.5	1,772
1972	206,659	190,039	16,620	183,443	88.8	168,990	92.1	14,453	23,216	11.2	21,049	90.7	2,167
1973	218,990	201,663	17,327	186,297	85.1	171,731	92.2	14,566	32,693	14.9	29,932	91.6	2,761
1974	235,452	216,329	19,123	194,079	82.4	178,926	92.2	15,153	41,373	17.6	37,403	90.4	3,970
1975	242,267	219,886	22,381	192,100	79.3	177,117	92.2	14,983	50,167	20.7	42,769	85.3	7,398
1976	244,292	220,124	24,168	189,810	77.7	171,967	90.6	17,843	54,482	22.3	48,157	88.4	6,325
1977	251,357	226,318	25,039	191,451	76.2	173,165	90.4	18,286	59,906	23.8	53,153	88.7	6,753
1978	256,904	232,540	24,364	192,221	74.8	174,906	91.0	17,315	64,683	25.2	57,634	89.1	7,049
1979	263,404	238,949	24,455	193,363	73.4	176,394	91.2	16,969	70,041	26.6	62,555	89.3	7,486
1980	277,767	251,359	26,408	199,344	71.8	181,448	91.0	17,896	78,423	28.2	69,911	89.1	8,512
1981	274,595	248,328	26,267	192,936	70.3	175,414	90.9	17,522	81,659	29.7	72,914	89.3	8,745
1982	278,425	252,108	26,317	191,200	68.7	173,941	91.0	17,259	87,225	31.3	78,167	89.6	9,058
1983	278,529	249,636	28,893	188,096	67.5	169,071	89.9	19,025	90,433	32.5	80,565	89.1	9,868
1984	278,598	249,708	28,890	184,949	66.4	166,286	89.9	18,663	93,649	33.6	83,422	89.1	10,227
1985	274,200	246,619	27,581	179,792	65.6	162,368	90.3	17,424	94,408	34.4	84,251	89.2	10,157
1986	270,401	245,647	24,754	173,851	64.3	158,557	91.2	15,294	96,550	35.7	87,090	90.2	9,460
1987	268,332	241,807	26,525	170,129	63.4	153,668	90.3	16,461	98,203	36.6	88,139	89.8	10,064
1988*	267,096	241,836	25,260	166,685	62.4	151,182	90.7	15,503	100,411	37.6	90,654	90.3	9,757

* Preliminary data.

SOURCE: *Selected Data on Graduate Students and Postdoctorates in Science and Engineering: Fall 1990,* National Science Foundation

TABLE 1-44

FULL-TIME SCIENCE AND ENGINEERING GRADUATE STUDENTS IN ALL INSTITUTIONS BY FIELD, LEVEL OF STUDY, CITIZENSHIP, AND SEX, 1990

Field	Total	Level of study		Citizenship		Sex		Control	
		First year	Beyond first year	U.S.	Non-U.S.	Men	Women	Public	Private
Total, all surveyed fields	295,836	88,160	207,676	205,026	90,810	188,420	107,416	212,151	83,685
Total, science/engineering fields	267,621	76,934	190,687	180,360	87,261	180,000	87,621	190,466	77,155
Engineering, total	66,547	20,253	46,294	35,211	31,336	57,726	8,821	48,149	18,398
Aerospace	3,010	933	2,077	1,920	1,090	2,811	199	2,340	670
Agricultural	793	204	589	332	461	710	83	745	48
Biomedical	1,798	476	1,322	1,203	595	1,342	456	1,087	711
Chemical	5,453	1,405	4,048	2,702	2,751	4,557	896	3,894	1,559
Civil	10,445	3,800	6,645	5,585	4,860	8,574	1,871	8,072	2,373
Electrical	18,710	5,745	12,965	9,770	8,940	16,731	1,979	13,063	5,647
Engineering science	1,332	285	1,047	784	548	1,146	186	534	798
Industrial	4,966	1,737	3,229	2,580	2,386	4,022	944	3,828	1,138
Mechanical	10,843	3,267	7,576	5,785	5,058	9,986	857	7,876	2,967
Metallurgical/materials	3,848	892	2,956	2,003	1,845	3,194	654	2,582	1,266
Mining	334	79	255	139	195	287	47	292	42
Nuclear	1,080	294	786	577	503	952	128	886	194
Petroleum	484	112	372	155	329	460	24	386	98
Engineering, n.e.c.	3,451	1,024	2,427	1,676	1,775	2,954	497	2,564	887
Sciences, total	201,074	56,681	144,393	145,149	55,925	122,274	78,800	142,317	58,757
Physical sciences	29,573	6,817	22,756	17,898	11,675	22,728	6,845	21,344	8,229
Astronomy	790	172	618	603	187	629	161	518	272
Chemistry	16,390	3,794	12,596	10,302	6,088	11,438	4,952	11,966	4,424
Physics	12,222	2,789	9,433	6,871	5,351	10,564	1,658	8,690	3,532
Physical sciences, n.e.c.	171	62	109	122	49	97	74	170	1
Earth, atmospheric, and ocean sciences	10,295	2,707	7,588	7,827	2,468	7,345	2,950	8,489	1,806
Atmospheric sciences	828	247	581	564	264	653	175	817	11
Geosciences	5,808	1,374	4,434	4,412	1,396	4,383	1,425	4,589	1,219
Oceanography	1,853	433	1,420	1,334	519	1,242	611	1,555	298
Earth, atmos., and ocean sci., n.e.c.	1,806	653	1,153	1,517	289	1,067	739	1,528	278
Mathematical sciences	13,870	4,244	9,626	8,076	5,794	9,827	4,043	11,020	2,850
Computer sciences	16,872	5,396	11,476	8,932	7,940	13,372	3,500	11,434	5,438
Agricultural sciences	8,961	2,399	6,562	6,287	2,674	6,352	2,609	8,605	356
Biological sciences	41,685	10,371	31,314	30,850	10,835	23,241	18,444	30,380	11,305
Anatomy	922	204	718	713	209	512	410	661	261
Biochemistry	4,936	1,060	3,876	3,313	1,623	2,906	2,030	3,342	1,594
Biology	9,340	2,530	6,810	7,527	1,813	5,342	3,998	6,687	2,653
Biometry/epidemiology	1,264	458	806	916	348	601	663	738	526
Biophysics	605	129	476	407	198	452	153	324	281
Botany	2,471	539	1,932	1,569	902	1,503	968	2,234	237
Cell biology	2,515	580	1,935	1,973	543	1,414	1,101	1,410	1,105
Ecology	890	187	703	705	185	541	349	827	63
Entomology/parasitology	1,015	221	794	714	301	709	306	949	66
Genetics	1,317	292	1,025	1,024	293	641	676	954	363
Microbiology	4,365	955	3,410	3,229	1,136	2,312	2,053	3,251	1,114
Nutrition	2,920	863	2,057	1,857	1,063	1,001	1,919	2,457	463
Pathology	1,144	259	885	845	299	675	469	796	348
Pharmacology	2,294	553	1,741	1,707	587	1,289	1,005	1,608	686
Physiology	2,116	653	1,463	1,535	581	1,250	866	1,407	709
Zoology	1,683	408	1,275	1,398	285	1,008	675	1,567	116
Biosciences, n.e.c.	1,888	480	1,408	1,418	470	1,085	803	1,168	720
Psychology	30,992	8,800	22,192	29,494	1,498	10,757	20,235	18,208	12,784
Social sciences	48,826	15,947	32,879	35,785	13,041	28,652	20,174	32,837	15,989
Agricultural economics	1,961	609	1,352	1,031	930	1,442	519	1,846	115
Anthropology	4,741	1,133	3,608	4,053	688	2,016	2,725	3,254	1,487
Economics (except agricultural)	9,346	2,836	6,510	4,719	4,627	6,873	2,473	5,904	3,442
Geography	2,429	783	1,646	1,991	438	1,617	812	2,260	169
History and philosophy of science	340	77	263	296	44	220	120	180	160
Linguistics	2,586	712	1,874	1,520	1,066	1,142	1,444	1,757	829
Political science	15,472	5,866	9,606	12,760	2,712	9,368	6,104	9,138	6,334
Sociology	5,679	1,523	4,156	4,314	1,365	2,633	3,046	4,174	1,505
Sociology/anthropology	782	247	535	639	143	327	455	597	185
Social sciences, n.e.c.	5,490	2,161	3,329	4,462	1,028	3,014	2,476	3,727	1,763
Total, health fields	28,215	11,226	16,989	24,666	3,549	8,420	19,795	21,685	6,530
Dentistry	840	337	503	658	182	597	243	668	172
Neurology	788	194	594	654	134	446	342	444	344
Nursing	6,126	2,224	3,902	5,929	197	405	5,721	4,883	1,243
Pharmaceutical sciences	2,137	565	1,572	1,203	934	1,307	830	1,763	374
Preventive medicine/community health	4,500	2,161	2,339	3,525	975	1,861	2,639	3,358	1,142
Speech pathology/audiology	5,840	2,503	3,337	5,542	298	544	5,296	5,135	705
Veterinary sciences	709	174	535	508	201	415	294	638	71
Clinical medicine, n.e.c.	1,431	533	898	1,161	270	804	627	937	494
Health related, n.e.c.	5,844	2,535	3,309	5,486	358	2,041	3,803	3,859	1,985

SOURCE: *Selected Data on Graduate Students and Postdoctorates in Science and Engineering: Fall 1990,* National Science Foundation

TABLE 1-45

SCIENCE AND ENGINEERING GRADUATE STUDENTS IN ALL INSTITUTIONS BY FIELD AND CITIZENSHIP, AND BY RACE/ETHNICITY OF U.S. CITIZENS, 1990

Field	Total	Racial/ethnic background of U.S. citizens						Non-U.S. citizens
		Black non-Hispanic	American Indian/ Alaskan Native	Asian/ Pacific Islander	Hispanic	White non-Hispanic	Other or unknown	
Total, all surveyed fields	458,943	15,473	1,270	19,195	12,569	285,997	17,675	106,764
Total, science/engineering fields	401,569	12,891	1,048	17,474	10,502	241,210	15,985	102,459
Engineering, total	109,299	1,810	157	6,775	1,955	56,341	6,134	38,127
Aerospace	4,006	38	6	169	51	2,341	215	1,186
Agricultural	939	4	1	23	17	383	5	506
Biomedical	2,130	30	2	137	28	1,222	35	676
Chemical	6,734	84	5	343	149	3,163	72	2,918
Civil	15,891	237	38	779	322	7,851	643	6,021
Electrical	33,887	610	49	3,009	578	15,728	2,368	11,545
Engineering science	2,547	35	6	141	17	1,599	54	695
Industrial	11,816	308	24	459	271	6,773	837	3,144
Mechanical	16,879	246	15	803	278	8,291	1,189	6,057
Metallurgical/materials	4,822	53	2	273	73	2,274	151	1,996
Mining	437	2	0	16	3	172	6	238
Nuclear	1,278	7	2	27	24	672	10	536
Petroleum	670	6	0	18	11	265	3	367
Engineering, n.e.c.	7,263	150	7	578	133	3,607	546	2,242
Sciences, total	292,270	11,081	891	10,699	8,547	186,869	9,851	64,332
Physical sciences	34,337	653	63	1,217	641	18,570	682	12,511
Astronomy	811	8	2	38	7	549	15	192
Chemistry	19,142	451	44	701	425	10,498	433	6,590
Physics	13,985	177	16	467	202	7,251	214	5,658
Physical sciences, n.e.c.	399	17	1	11	7	272	20	71
Earth, atmospheric, and ocean sciences	14,159	125	30	267	241	10,476	303	2,717
Atmospheric sciences	929	9	0	26	9	597	7	281
Geosciences	7,742	52	21	116	129	5,755	155	1,514
Oceanography	2,552	21	1	40	60	1,551	36	543
Earth, atmos., and ocean sci., n.e.c.	3,236	43	8	85	43	2,573	105	379
Mathematical sciences	19,884	512	20	900	370	10,705	936	6,441
Computer sciences	34,507	984	42	2,864	566	17,436	1,886	10,729
Agricultural sciences	11,183	178	20	271	293	7,163	271	2,987
Biological sciences	50,921	1,263	137	2,314	1,237	33,180	1,064	11,726
Anatomy	1,011	25	1	64	16	677	8	220
Biochemistry	5,153	76	6	274	89	2,980	37	1,671
Biology	13,258	427	33	547	452	9,202	518	2,079
Biometry/epidemiology	1,966	76	2	86	73	1,311	6	412
Biophysics	642	5	5	57	7	368	2	201
Botany	2,884	49	9	64	31	1,729	43	961
Cell biology	2,592	34	4	121	88	1,756	34	555
Ecology	1,177	13	3	16	26	889	11	219
Entomology/parasitology	1,194	16	8	43	32	722	28	345
Genetics	1,408	25	1	71	12	988	8	303
Microbiology	4,874	87	20	243	114	3,097	98	1,215
Nutrition	4,259	134	17	174	71	2,574	85	1,204
Pathology	1,424	41	4	66	20	926	49	318
Pharmacology	2,438	76	11	170	55	1,481	40	605
Physiology	2,276	66	5	156	44	1,354	48	603
Zoology	2,110	44	7	36	33	1,633	28	329
Biosciences, n.e.c.	2,255	69	6	106	74	1,493	21	486
Psychology	48,659	2,289	236	964	2,159	39,511	1,660	1,840
Social sciences	78,620	5,077	343	1,922	3,040	49,828	3,049	15,381
Agricultural economics	2,273	47	0	55	90	1,016	14	1,051
Anthropology	6,494	128	66	114	173	4,943	285	785
Economics (except agricultural)	12,432	329	68	410	251	5,570	520	5,284
Geography	3,618	71	12	74	61	2,745	150	505
History and philosophy of science	370	6	1	8	5	298	8	44
Linguistics	3,533	162	8	81	154	1,837	68	1,223
Political science	30,698	2,650	92	711	1,349	21,084	1,388	3,424
Sociology	7,756	573	45	225	291	4,789	214	1,619
Sociology/anthropology	1,212	118	5	9	26	837	33	184
Social sciences, n.e.c.	10,234	993	46	215	640	6,709	369	1,262
Total, health fields	57,374	2,582	222	1,721	2,067	44,787	1,690	4,305
Dentistry	969	23	3	52	25	623	40	203
Neurology	810	9	1	50	19	588	6	137
Nursing	21,320	1,011	93	449	512	18,444	503	308
Pharmaceutical sciences	2,963	116	2	135	71	1,372	141	1,076
Preventive medicine/community health	8,261	491	37	278	676	5,293	182	1,204
Speech pathology/audiology	8,608	387	34	141	284	7,079	316	367
Veterinary sciences	900	41	2	20	11	576	29	221
Clinical medicine, n.e.c.	1,839	50	6	121	46	1,249	68	299
Health related, n.e.c.	11,704	454	44	225	423	9,563	405	490

SOURCE: *Selected Data on Graduate Students and Postdoctorates in Science and Engineering: Fall 1990,* National Science Foundation

TABLE 1-46

SCIENCE AND ENGINEERING GRADUATE STUDENTS IN PHD INSTITUTIONS BY FIELD AND CITIZENSHIP, AND BY RACE/ETHNICITY OF U.S. CITIZENS, 1990

Field	Total	Racial/ethnic background of U.S. citizens						Non-U.S. citizens
		Black non-Hispanic	American Indian/ Alaskan Native	Asian/ Pacific Islander	Hispanic	White non-Hispanic	Other or unknown	
Total, all surveyed fields	398,405	11,565	1,088	16,537	10,775	245,004	12,903	100,533
Total, science/engineering fields	350,013	9,425	898	14,983	8,953	207,588	11,729	96,437
Engineering, total	100,253	1,534	143	5,869	1,749	49,353	5,467	36,138
Aerospace	3,915	38	6	164	51	2,293	213	1,150
Agricultural	939	4	1	23	17	383	5	506
Biomedical	2,067	29	2	131	27	1,191	27	660
Chemical	6,618	81	5	334	147	3,095	67	2,889
Civil	14,773	202	33	684	289	7,259	523	5,783
Electrical	30,453	497	45	2,555	495	14,020	2,117	10,724
Engineering science	2,529	35	6	141	17	1,584	51	695
Industrial	10,288	254	22	400	253	5,667	782	2,910
Mechanical	15,511	213	13	676	246	7,613	1,065	5,685
Metallurgical/materials	4,684	51	2	262	71	2,194	142	1,962
Mining	409	2	0	16	3	150	6	232
Nuclear	1,278	6	2	27	24	672	10	536
Petroleum	656	6	0	18	11	256	3	362
Engineering, n.e.c.	6,133	115	6	438	98	2,976	456	2,044
Sciences, total	249,760	7,891	755	9,114	7,204	158,235	6,262	60,299
Physical sciences	32,504	501	62	1,120	596	17,645	587	11,993
Astronomy	811	8	2	38	7	549	15	192
Chemistry	18,059	354	43	638	397	9,937	376	6,314
Physics	13,392	132	16	434	191	7,000	180	5,439
Physical sciences, n.e.c.	242	7	1	10	1	159	16	48
Earth, atmospheric, and ocean sciences	12,866	103	30	234	219	9,439	212	2,629
Atmospheric sciences	925	9	0	26	9	594	6	281
Geosciences	7,199	41	21	112	119	5,319	125	1,462
Oceanography	2,117	20	1	35	59	1,432	30	540
Earth, atmos., and ocean sci., n.e.c.	2,625	33	8	61	32	2,094	51	346
Mathematical sciences	17,297	355	14	719	328	9,095	693	6,093
Computer sciences	27,667	704	30	2,198	473	14,172	936	9,154
Agricultural sciences	10,445	137	18	248	257	6,772	162	2,851
Biological sciences	47,054	1,002	129	2,185	1,106	30,409	833	11,390
Anatomy	1,011	25	1	64	16	677	8	220
Biochemistry	5,119	75	6	288	85	2,961	36	1,668
Biology	10,285	232	26	456	350	7,059	312	1,850
Biometry/epidemiology	1,966	76	2	86	73	1,311	6	412
Biophysics	642	5	2	57	7	368	2	201
Botany	2,833	40	7	63	31	1,705	43	944
Cell biology	2,592	34	4	121	88	1,756	34	555
Ecology	1,083	10	3	15	25	802	10	218
Entomology/parasitology	1,194	16	8	43	32	722	28	345
Genetics	1,364	23	1	69	11	952	8	300
Microbiology	4,812	83	20	235	111	3,076	94	1,193
Nutrition	3,951	113	16	166	61	2,365	76	1,154
Pathology	1,357	35	4	66	19	869	49	315
Pharmacology	2,438	76	11	170	55	1,481	40	605
Physiology	2,276	66	5	156	44	1,354	48	603
Zoology	2,097	44	7	36	33	1,623	28	326
Biosciences, n.e.c.	2,034	49	6	94	65	1,328	11	481
Psychology	34,685	1,421	181	771	1,689	28,226	788	1,609
Social sciences	67,242	3,668	291	1,639	2,536	42,477	2,051	14,580
Agricultural economics	2,232	41	0	54	90	1,014	14	1,019
Anthropology	6,244	124	59	109	162	4,769	254	767
Economics (except agricultural)	11,668	295	66	388	228	5,292	351	5,048
Geography	2,938	50	12	61	52	2,207	85	471
History and philosophy of science	370	6	1	8	5	298	8	44
Linguistics	3,049	126	7	75	107	1,498	54	1,182
Political science	24,414	1,852	63	536	1,080	16,833	931	3,119
Sociology	6,940	375	44	215	242	4,379	135	1,550
Sociology/anthropology	1,125	95	4	8	25	780	31	182
Social sciences, n.e.c.	8,262	704	35	185	545	5,407	188	1,198
Total, health fields	48,392	2,140	190	1,554	1,822	37,416	1,174	4,096
Dentistry	969	23	3	52	25	623	40	203
Neurology	790	9	1	50	19	569	6	136
Nursing	18,242	845	77	407	423	15,772	436	282
Pharmaceutical sciences	2,961	116	2	185	71	1,370	141	1,076
Preventive medicine/community health	8,073	484	37	374	673	5,145	180	1,180
Speech pathology/audiology	6,441	288	26	120	235	5,324	121	327
Veterinary sciences	881	26	2	20	11	576	29	217
Clinical medicine, n.e.c.	1,673	42	6	99	41	1,169	57	259
Health related, n.e.c.	8,362	307	36	247	324	6,868	164	416

SOURCE: National Science Foundation SRS, 1990

TABLE 1-47

FULL–TIME SCIENCE/ENGINEERING GRADUATE STUDENTS IN DOCTORATE–GRANTING INSTITUTIONS BY FIELD AND SEX, 1974 – 1990

Year	Total	Eng	Phys	Envir	Math	Comp	Agri	Biol	Psych	Social	Health
TOTAL											
1974	195,455	33,635	21,255	8,381	10,003	3,736	7,614	32,175	18,866	44,549	15,241
1975	210,307	37,105	21,317	8,919	10,038	4,114	8,507	34,541	19,672	49,507	16,587
1976	214,082	36,489	21,623	9,439	10,156	4,379	9,042	35,231	21,406	48,573	17,744
1977	217,453	36,675	21,747	10,019	9,814	4,196	9,296	36,228	21,266	49,433	18,779
1978	216,606	37,057	21,497	9,997	9,296	4,426	9,259	35,974	20,711	48,409	19,982
1979	223,409	39,344	21,797	10,171	9,136	5,073	9,371	35,837	20,737	50,680	21,263
1980	230,535	41,939	22,254	10,265	9,368	5,900	9,591	35,817	21,580	51,518	22,303
1981	234,194	44,817	22,600	10,491	9,680	6,465	9,630	35,454	21,544	51,402	22,111
1982	236,939	48,687	23,330	10,873	10,174	7,908	9,500	35,226	21,103	49,211	20,927
1983	243,613	53,516	24,492	11,466	10,312	9,267	9,397	35,187	21,319	48,060	20,577
1984	246,751	54,768	25,147	11,283	10,613	10,108	9,327	35,826	21,588	47,194	20,897
1985	250,104	55,686	25,938	10,883	11,160	12,374	8,723	35,860	21,324	46,787	21,369
1986	259,471	59,862	27,069	10,916	11,727	13,389	8,858	36,826	21,981	47,452	21,391
1987	264,862	61,194	27,642	10,151	12,354	13,578	8,610	37,734	22,680	48,699	22,220
1988	268,385	61,656	27,832	9,893	12,791	13,811	8,677	38,235	23,360	49,208	22,922
1989	266,937	62,533	28,429	9,715	13,024	14,070	8,538	39,443	24,661	42,649	23,875
1990	275,262	64,169	28,845	9,848	13,202	14,701	8,552	40,132	24,930	45,634	25,249
WOMEN											
1974	46,278	1,353	2,534	1,038	2,019	505	870	9,148	7,425	13,998	7,388
1975	52,222	1,873	2,680	1,217	2,121	599	1,130	10,021	8,318	15,663	8,600
1976	57,830	2,038	2,916	1,503	2,213	682	1,423	10,929	9,239	16,638	10,249
1977	63,150	2,325	3,051	1,727	2,133	676	1,725	11,854	9,662	18,261	11,736
1978*	67,200	2,900	3,100	1,900	2,000	800	1,900	12,000	9,900	19,700	13,000
1979	71,075	3,477	3,330	2,147	1,996	910	2,111	12,769	10,125	20,140	14,070
1980	75,930	3,923	3,533	2,335	2,140	1,232	2,292	13,184	10,962	21,425	14,904
1981	78,901	4,639	3,815	2,452	2,358	1,465	2,242	13,354	11,371	22,091	15,114
1982	79,743	5,242	4,203	2,665	2,552	1,968	2,372	13,882	11,499	20,949	14,411
1983	81,445	5,805	4,632	2,826	2,666	2,208	2,369	14,038	11,721	20,967	14,213
1984	83,340	6,227	4,893	2,732	2,737	2,374	2,431	14,457	12,304	20,667	14,518
1985	84,437	6,466	5,193	2,721	2,969	2,627	2,255	14,625	12,452	20,326	14,803
1986	88,058	7,160	5,535	2,818	3,154	2,856	2,272	15,324	13,134	20,923	14,882
1987	90,365	7,367	5,794	2,603	3,313	2,833	2,250	15,813	13,660	21,692	15,040
1988	93,846	7,495	6,132	2,653	3,461	2,935	2,344	16,289	14,557	22,209	15,771
1989	92,153	7,967	6,445	2,662	3,701	2,813	2,360	17,101	15,694	16,997	16,413
1990	97,133	8,507	6,638	2,810	3,808	2,957	2,495	17,676	16,049	18,752	17,441
PERCENT WOMEN											
1974	23.7	4.0	11.9	12.4	20.2	13.5	11.4	28.4	39.4	31.4	48.5
1975	24.8	5.0	12.6	13.6	21.1	14.6	13.3	29.0	42.3	31.6	51.8
1976	27.0	5.6	13.5	15.9	21.8	15.6	15.7	31.0	43.2	34.3	57.8
1977	29.0	6.3	14.0	17.2	21.7	16.1	18.6	32.7	45.4	36.9	62.5
1978	30.9	7.8	14.4	19.0	21.5	18.1	20.5	33.4	47.8	40.7	65.1
1979	32.8	9.4	15.5	21.5	21.5	20.6	22.8	35.5	48.9	41.6	70.4
1980	34.0	10.0	16.2	23.0	23.4	24.3	24.5	36.8	52.9	42.3	70.1
1981	33.7	10.4	16.9	23.4	24.4	22.7	23.3	37.7	52.8	43.0	68.4
1982	33.7	10.8	18.0	24.5	25.1	24.9	25.0	39.4	54.5	42.6	68.9
1983	33.4	10.8	18.9	24.6	25.9	23.8	25.2	39.9	55.0	43.6	69.1
1984	33.8	11.4	19.5	24.2	25.8	23.5	26.1	40.4	57.0	43.8	69.5
1985	33.8	11.6	20.0	25.0	26.6	21.2	25.9	40.8	58.4	43.4	69.3
1986	33.9	12.0	20.4	25.8	26.9	21.3	25.6	41.6	59.8	44.1	69.6
1987	34.1	12.0	21.0	25.6	26.8	20.9	26.1	41.9	60.2	44.5	67.7
1988	35.0	12.2	22.0	26.8	27.1	21.3	27.0	42.6	62.3	45.1	68.8
1989	34.5	12.7	22.7	27.4	28.4	20.0	27.6	43.4	63.8	39.9	68.7
1990	35.3	13.3	23.0	28.5	28.8	20.1	29.2	44.0	64.4	41.1	69.1

* Estimates. Data not collected by sex in 1978

SOURCE: Selected data on graduate science/engineering students and postdoctorates, Fall 1990, National Science Foundation

TABLE 1-48

FULL-TIME SCIENCE AND ENGINEERING GRADUATE STUDENTS WHO ARE U.S. CITIZENS IN ALL INSTITUTIONS BY AREA OF STUDY AND MINORITY GROUP, 1980 – 1990

	Total Science/Eng		Engineering		Physical Sciences		Environmental Sciences		Mathematic Sciences		Computer Sciences		Life Sciences		Psychology		Social Sciences*	
	No.	%	No.	%	No	%	No.	%	No.	%	No	%	No	%	No.	%	No	%
TOTAL U.S.																		
1980	188,046	100	25,108	100	17,174	100	9,570	100	6,648	100	4,521	100	63,543	100	25,482	100	36,000	100
1981	187,991	100	26,443	100	17,037	100	9,534	100	6,512	100	4,887	100	62,857	100	25,721	100	35,000	100
1982	188,409	100	28,812	100	17,555	100	9,789	100	6,935	100	5,981	100	60,433	100	24,733	100	34,171	100
1983	191,391	100	31,450	100	17,973	100	10,358	100	6,722	100	6,724	100	59,547	100	25,607	100	33,010	100
1984	191,703	100	32,223	100	18,250	100	10,224	100	6,781	100	7,052	100	59,894	100	25,063	100	32,216	100
1985	190,873	100	32,127	100	18,186	100	9,748	100	7,009	100	8,551	100	58,934	100	24,608	100	31,710	100
1986	192,821	100	33,597	100	18,266	100	9,432	100	7,253	100	9,176	100	58,688	100	25,351	100	31,058	100
1987	194,049	100	34,063	100	18,386	100	8,575	100	7,555	100	9,087	100	58,734	100	26,282	100	31,367	100
1988	193,979	100	33,783	100	18,090	100	8,116	100	7,749	100	8,776	100	59,183	100	27,149	100	31,133	100
1989	198,912	100	34,272	100	18,063	100	7,813	100	7,717	100	8,941	100	60,499	100	28,811	100	32,796	100
1990	205,026	100	35,211	100	17,898	100	7,827	100	8,076	100	8,932	100	61,803	100	29,494	100	35,785	100
BLACK, NON-HISPANIC																		
1980	6,607	3.5	472	1.9	323	1.9	66	0.7	141	2.1	67	1.5	1,633	2.6	1,017	4.0	2,888	6.2
1981	6,344	3.4	425	1.6	328	1.9	71	0.7	138	2.1	103	2.1	1,442	2.3	983	3.8	2,854	6.3
1982	6,408	3.4	519	1.8	418	2.4	76	0.8	174	2.5	198	3.3	1,692	2.8	1,021	4.1	2,310	6.8
1983	6,661	3.5	663	2.1	412	2.3	82	0.8	164	2.4	207	3.1	1,727	2.9	1,140	4.5	2,266	6.9
1984	6,618	3.5	700	2.2	437	2.4	84	0.8	187	2.8	204	2.9	1,715	2.9	1,111	4.4	2,180	6.8
1985	6,496	3.4	704	2.2	379	2.1	85	0.9	198	2.8	204	2.4	1,782	3.0	1,060	4.3	2,084	6.6
1986	6,491	3.4	769	2.3	391	2.1	65	0.7	244	3.4	289	3.1	1,723	2.9	1,090	4.3	1,920	6.2
1987	6,500	3.3	718	2.1	406	2.2	68	0.8	257	3.4	297	3.3	1,718	2.9	1,073	4.1	1,963	6.3
1988	7,093	3.7	833	2.5	442	2.4	77	0.9	217	2.8	326	3.7	1,917	3.2	1,182	4.4	2,099	6.7
1989	7,703	3.9	955	2.8	479	2.7	67	0.9	254	3.3	344	3.8	2,080	3.4	1,254	4.4	2,270	6.9
1990	8,249	4.0	961	2.7	482	2.7	88	1.1	264	3.3	366	4.1	2,224	3.6	1,291	4.4	2,573	7.2
AMERICAN INDIAN/ALASKAN NATIVE																		
1980	661	0.4	26	0.1	13	0.1	38	0.4	25	0.4	7	0.2	172	0.3	185	0.7	195	0.4
1981	516	0.3	66	0.2	15	0.1	10	0.1	5	0.1	3	0.1	127	0.2	48	0.2	242	0.5
1982	639	0.3	76	0.3	32	0.2	17	0.2	20	0.3	15	0.3	188	0.3	78	0.3	213	0.6
1983	694	0.4	98	0.3	40	0.2	24	0.2	12	0.2	11	0.2	219	0.4	93	0.4	197	0.6
1984	634	0.3	110	0.3	65	0.4	18	0.2	4	0.1	37	0.5	170	0.3	82	0.3	148	0.5
1985	560	0.3	68	0.2	28	0.2	19	0.2	6	0.1	45	0.5	169	0.3	89	0.4	136	0.4
1986	575	0.3	78	0.2	35	0.2	17	0.2	9	0.1	10	0.1	186	0.3	99	0.4	141	0.5
1987	616	0.3	66	0.2	36	0.2	15	0.2	21	0.3	15	0.2	186	0.3	113	0.4	164	0.5
1988	682	0.4	78	0.2	43	0.2	23	0.3	16	0.2	12	0.1	206	0.3	121	0.4	183	0.6
1989	669	0.3	66	0.2	39	0.2	21	0.3	20	0.3	17	0.2	201	0.3	130	0.5	175	0.5
1990	768	0.4	66	0.2	56	0.3	25	0.3	13	0.2	18	0.2	237	0.4	151	0.5	202	0.6
ASIAN/PACIFIC ISLANDER																		
1980	5,394	2.9	1506	6.0	513	3.0	143	1.5	205	3.1	200	4.4	1,644	2.6	302	1.2	881	1.9
1981	4,924	2.6	1118	4.2	485	2.8	101	1.1	245	3.8	264	5.4	1,391	2.2	328	1.3	992	2.2
1982	5,487	2.9	1419	4.9	532	3.0	136	1.4	298	4.3	365	6.1	1,620	2.7	319	1.3	798	2.3
1983	6,235	3.3	1724	5.5	589	3.3	155	1.5	337	5.0	558	8.3	1,691	2.8	368	1.4	813	2.5
1984	6,958	3.6	2129	6.6	747	4.1	144	1.4	304	4.5	545	7.7	1,810	3.0	384	1.5	895	2.8
1985	7,848	4.1	2575	8.0	790	4.3	155	1.6	413	5.9	735	8.6	1,915	3.2	381	1.5	884	2.8
1986	8,649	4.5	2827	8.4	766	4.2	124	1.3	468	6.5	884	9.6	2,122	3.6	445	1.8	1013	3.3
1987	9,847	5.1	3217	9.4	896	4.9	143	1.7	504	6.7	1062	11.7	2,307	3.9	555	2.1	1163	3.7
1988	10,294	5.3	3280	9.7	1039	5.7	173	2.1	472	6.1	1140	13.0	2,548	4.3	580	2.1	1062	3.4
1989	10,782	5.4	3314	9.7	984	5.4	165	2.1	435	5.6	1115	12.5	2,883	4.8	642	2.2	1244	3.8
1990	12,106	5.9	3690	10.5	1038	5.8	197	2.5	571	7.1	1204	13.5	3,346	5.4	729	2.5	1331	3.7

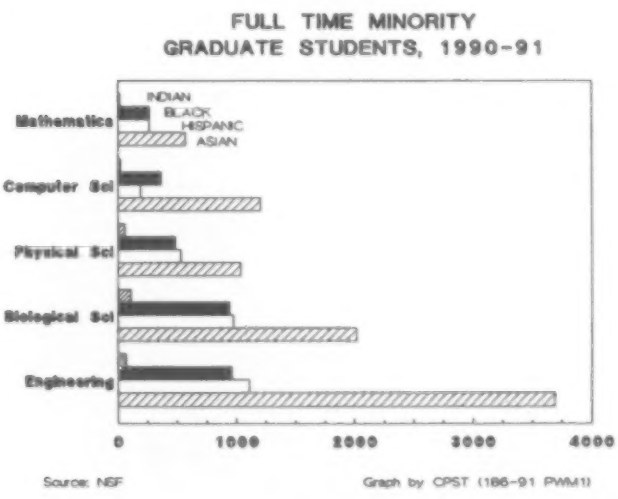
* 1980 and 1981 totals estimated

TABLE 1-48 (continued)

FULL–TIME SCIENCE AND ENGINEERING GRADUATE STUDENTS WHO ARE U.S. CITIZENS IN ALL INSTITUTIONS BY AREA OF STUDY AND MINORITY GROUP, 1980 – 1990, CONTINUED

	Total Science/Eng		Engineering		Physical Sciences		Environmental Sciences		Mathematical Sciences		Computer Sciences		Life Sciences		Psychology		Social Sciences	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
HISPANIC																		
1980	4,922	2.6	572	2.3	305	1.8	115	1.2	140	2.1	42	0.9	1,451	2.3	971	3.8	1326	2.9
1981	4,521	2.4	492	1.9	324	1.9	130	1.4	162	2.5	54	1.1	977	1.6	955	3.7	1427	3.2
1982	5,035	2.7	601	2.1	387	2.2	132	1.3	174	2.5	105	1.8	1,335	2.2	1032	4.2	1269	3.7
1983	5,968	3.1	773	2.5	449	2.5	145	1.4	205	3.0	105	1.6	1,774	3.0	1134	4.4	1383	4.2
1984	5,939	3.1	733	2.3	462	2.5	193	1.9	176	2.6	115	1.6	1,769	3.0	1148	4.6	1343	4.2
1985	6,165	3.2	754	2.3	530	2.9	184	1.9	165	2.4	130	1.5	2,034	3.5	1008	4.1	1360	4.3
1986	6,282	3.3	854	2.5	549	3.0	179	1.9	165	2.3	161	1.8	1,997	3.4	1141	4.5	1236	4.0
1987	6,274	3.2	851	2.5	514	2.8	183	2.1	192	2.5	161	1.8	2,083	3.5	1100	4.2	1190	3.8
1988	6,628	3.4	947	2.8	549	3.0	167	2.1	219	2.8	162	1.8	2,233	3.8	1118	4.1	1233	4.0
1989	7,073	3.6	1020	3.0	581	3.2	172	2.2	221	2.9	199	2.2	2,291	3.8	1260	4.4	1329	4.1
1990	7,833	3.8	1109	3.1	529	3.0	187	2.4	263	3.3	191	2.1	2,476	4.0	1414	4.8	1664	4.6
WHITE, NON–HISPANIC																		
1980	149,481	79.5	18603	74.1	13919	81.0	7523	78.6	5042	75.8	2793	61.8	50,716	79.8	17612	69.1	33273	71.7
1981	141,674	75.4	18411	69.6	13549	79.5	7114	74.6	4793	73.6	3428	70.1	47,740	76.0	15901	62.2	30638	68.0
1982	152,315	80.8	21673	75.2	14742	84.0	8388	85.7	5571	80.3	4339	72.5	51,807	85.7	19192	77.6	26603	77.9
1983	160,389	83.8	24559	78.1	15472	86.1	9320	90.0	5585	83.1	5053	75.1	52,382	88.0	21345	83.4	26673	80.8
1984	159,527	83.2	25211	78.2	15429	84.5	8804	86.1	5575	82.2	5345	75.8	52,713	88.0	20636	82.3	25814	80.1
1985	156,283	81.9	24657	76.7	15219	83.7	8482	87.0	5656	80.7	6006	70.2	50,701	86.0	20485	83.2	25077	79.1
1986	159,663	82.8	26283	78.2	15368	84.1	8458	89.7	5876	81.0	6659	72.6	50,802	86.6	21197	83.6	25020	80.6
1987	159,770	82.3	26130	76.7	15098	82.1	7699	89.8	5934	78.5	6635	73.0	50,570	86.1	22362	85.1	25342	80.8
1988	160,513	82.7	26265	77.7	15135	83.7	7386	91.0	6304	81.4	6419	73.1	50,721	85.7	23001	84.7	25282	81.2
1989	163,431	82.2	26137	76.3	15230	84.3	7182	91.9	6332	82.1	6432	71.9	51,206	84.6	24504	85.1	26408	80.5
1990	168,373	82.1	27153	77.1	15415	86.1	7134	91.1	6531	80.9	6464	72.4	52,090	84.3	25006	84.8	28580	79.9

CHART 1-7



Source: National Science Foundation, SRS, 1990

TABLE 1-49

FULL–TIME SCIENCE/ENGINEERING GRADUATE STUDENTS IN ALL INSTITUTIONS BY CITIZENSHIP AND FIELD, 1977 – 1990

Year	Total	Eng	All Sci	Sciences								
				Phys	Envir	Math	Comp	Agri	Biol	Psych	Social	Health
Total Enrollment												
1977	236,164	37,565	177,941	22,505	10,556	10,365	4,604	9,567	38,603	25,710	56,031	20,658
1978	235,386	38,023	175,503	22,245	10,542	9,837	4,996	9,598	38,353	25,485	54,447	21,860
1979	242,379	40,393	178,848	22,535	10,724	9,668	5,853	9,794	38,218	25,865	56,191	23,138
1980	249,159	43,107	181,551	22,918	10,969	9,902	6,587	9,980	37,928	26,692	56,575	24,501
1981	252,997	46,257	182,157	23,308	11,038	10,154	7,445	10,076	37,582	26,725	55,829	24,583
1982	255,297	50,239	181,684	24,040	11,436	10,823	9,171	9,891	36,969	25,818	53,516	23,374
1983	262,495	54,327	185,054	25,205	12,049	10,964	10,687	9,836	37,112	26,729	52,472	23,114
1984	264,492	55,539	185,584	25,852	11,819	11,319	11,587	9,750	37,480	26,109	51,668	23,369
1985	267,305	56,293	187,138	26,669	11,439	11,833	14,101	9,097	37,362	25,776	50,861	23,874
1986	276,665	60,726	192,054	27,764	11,323	12,398	15,310	9,229	38,178	26,523	51,329	23,885
1987	282,620	62,229	195,585	28,414	10,543	13,068	15,572	8,983	38,776	27,435	52,794	24,806
1988	288,619	63,655	199,182	28,628	10,352	13,505	15,803	9,057	39,752	28,586	53,499	25,782
1989	285,989	64,716	194,695	29,193	10,138	13,705	16,008	8,926	40,984	30,172	45,569	26,578
1990	295,836	66,547	201,074	29,573	10,295	13,870	15,872	8,961	41,685	30,992	48,826	28,215
U.S. Citizens												
1977	197,716	23,922	154,523	17,809	9,417	7,910	3,495	7,679	34,755	24,968	48,490	19,271
1978	193,570	23,242	150,178	17,285	9,323	7,210	3,620	7,601	34,215	24,551	46,373	20,150
1979	195,492	23,733	150,661	17,188	9,402	6,772	4,082	7,653	33,778	24,717	47,069	21,098
1980	198,429	25,108	150,872	17,174	9,570	6,648	4,521	7,754	33,340	25,482	46,383	22,449
1981	198,018	26,443	149,146	17,037	9,534	6,513	4,887	7,701	32,730	25,721	45,023	22,429
1982	197,374	26,816	147,494	17,555	9,789	6,935	5,981	7,508	31,950	24,739	43,037	21,064
1983	199,970	31,456	147,823	17,973	10,358	6,722	6,724	7,368	31,579	25,635	41,464	20,691
1984	200,407	32,230	147,155	18,250	10,224	6,781	7,052	7,329	31,660	25,064	40,795	21,022
1985	198,533	32,135	145,067	18,186	9,748	7,009	8,551	6,759	30,990	24,615	39,209	21,331
1986	201,038	33,610	146,244	18,266	9,512	7,253	9,176	6,685	30,943	25,353	39,056	21,184
1987	203,214	34,085	147,102	18,386	8,635	7,574	9,087	6,366	30,685	26,221	40,148	22,027
1988	204,799	34,380	147,726	18,182	8,212	7,781	8,901	6,444	30,686	27,253	40,267	22,693
1989	198,912	34,272	141,338	18063	7813	7717	8941	6359	30838	28811	32796	23302
1988	205,026	35,211	145,149	17,899	7,827	8,076	8,932	6,287	30,850	29,494	35,785	24,666
Percent Foreign												
1977	16.3	36.3	13.2	20.9	10.8	23.7	24.1	19.7	10.0	2.9	13.5	6.7
1978	17.8	38.9	14.4	22.3	11.6	26.7	27.5	20.8	10.8	3.7	14.8	7.8
1979	19.3	41.2	15.8	23.7	12.3	30.0	30.3	21.9	11.6	4.4	16.2	8.8
1980	20.4	41.8	16.9	25.1	12.8	32.9	31.4	22.3	12.1	4.5	18.0	8.4
1981	21.7	42.8	18.1	26.9	13.6	35.9	34.4	23.6	12.9	3.8	19.4	8.8
1982	22.7	42.6	18.6	27.0	14.4	35.9	34.8	24.1	13.6	4.2	19.6	9.9
1983	23.8	42.1	20.1	28.7	14.0	36.7	37.1	25.1	14.9	4.1	21.0	10.5
1984	24.2	42.0	20.7	29.4	13.5	40.1	39.1	24.6	15.5	4.0	21.0	10.0
1985	25.7	42.9	22.5	31.8	14.8	40.8	39.4	25.7	17.1	4.5	22.9	10.7
1986	27.3	44.7	23.9	34.2	16.0	41.5	40.1	27.6	19.0	4.4	23.9	11.3
1987	28.1	45.2	24.8	35.3	18.1	42.0	41.6	29.1	20.9	4.4	24.0	11.2
1988	29.0	46.0	25.8	36.5	20.7	42.4	43.7	28.9	22.8	4.7	24.7	12.0
1989	30.4	47.0	27.4	38.1	22.9	43.7	44.1	28.8	24.8	4.5	28.0	12.3
1990	30.7	47.1	27.8	39.5	24.0	41.8	47.1	29.8	26.0	4.8	26.7	12.6

SOURCE: *Selected Data on Graduate Students and Postdoctorates in Science and Engineering: Fall 1990,* National Science Foundation

TABLE 1-50

FULL-TIME FOREIGN GRADUATE STUDENTS IN SCIENCE AND ENGINEERING AT ALL INSTITUTIONS, 1982-1990

Field	1982	1983	1984 1/	1985 1/	1986 1/	1987 1/	1988	1989	1990
Total, all surveyed fields	57,637	62,187	63,727	68,447	75,364	79,041	83,880	87,077	90,810
Total, science/engineering fields	55,336	59,779	61,384	65,905	72,663	76,280	80,802	83,801	87,261
Engineering, total	21,421	22,871	23,305	24,156	27,111	28,104	29,617	30,444	31,336
Aerospace	577	752	739	736	811	813	1,031	1,015	1,090
Agricultural	341	341	327	353	424	446	473	490	461
Biomedical	199	195	220	194	280	376	431	576	595
Chemical	2,341	2,239	2,131	2,209	2,182	2,312	2,392	2,605	2,751
Civil	4,048	4,365	4,507	4,524	4,780	4,617	4,798	4,932	4,860
Electrical	5,112	5,840	5,996	6,639	7,713	8,081	8,379	8,703	8,940
Engineering science	440	495	484	469	591	595	622	557	548
Industrial	1,626	1,372	1,471	1,623	1,801	2,064	2,115	2,290	2,386
Mechanical	3,500	4,003	4,107	4,017	4,575	4,649	5,124	4,850	5,058
Metallurgical/materials	1,181	1,174	1,209	1,286	1,506	1,594	1,643	1,816	1,845
Mining	122	155	141	135	192	196	219	185	195
Nuclear	473	461	412	430	445	450	461	484	503
Petroleum	260	290	287	250	267	318	362	299	329
Engineering, n.e.c.	1,201	1,189	1,274	1,291	1,544	1,593	1,567	1,642	1,775
Sciences, total	33,915	36,908	38,079	41,749	45,552	48,176	51,185	53,357	55,925
Physical sciences	6,485	7,232	7,602	8,483	9,498	10,028	10,484	11,130	11,675
Astronomy	102	105	117	150	160	172	160	158	187
Chemistry	3,216	3,525	3,635	4,095	4,513	4,940	5,324	5,715	6,088
Physics	3,157	3,584	3,828	4,215	4,800	4,894	4,964	5,225	5,351
Physical sciences, n.e.c.	10	18	22	23	25	22	36	32	49
Earth, atmospheric, and ocean sciences	1,647	1,691	1,595	1,691	1,891	1,968	2,180	2,325	2,468
Atmospheric sciences	187	182	164	196	206	219	231	235	264
Geosciences	913	923	899	945	1,019	1,101	1,195	1,279	1,396
Oceanography	340	377	297	312	390	356	437	522	519
Earth, atmos., and ocean sci., n.e.c.	207	209	235	238	276	292	317	289	289
Mathematical sciences	3,888	4,242	4,538	4,824	5,145	5,494	5,774	5,988	5,794
Computer sciences	3,190	3,963	4,535	5,550	6,134	6,485	6,820	7,067	7,940
Agricultural sciences	2,383	2,468	2,421	2,338	2,544	2,617	2,610	2,567	2,674
Biological sciences	5,039	5,533	5,820	6,372	7,235	8,098	9,103	10,146	10,835
Anatomy	88	74	58	91	121	153	180	215	209
Biochemistry	658	775	847	976	1,098	1,217	1,335	1,526	1,623
Biology	851	961	1,103	1,094	1,252	1,374	1,529	1,714	1,813
Biometry/epidemiology	150	157	123	173	223	271	305	310	348
Biophysics	70	80	80	93	120	125	179	208	198
Botany	595	612	619	627	757	777	897	890	902
Cell biology	103	128	147	189	275	333	405	477	542
Ecology	80	78	87	100	100	110	123	134	185
Entomology/parasitology	227	240	224	234	252	295	286	291	301
Genetics	114	145	134	166	205	244	264	300	293
Microbiology	435	512	545	653	725	809	952	1,070	1,136
Nutrition	841	821	891	925	905	967	974	998	1,063
Pathology	174	206	169	189	204	251	250	295	299
Pharmacology	243	245	256	264	333	396	459	528	587
Physiology	188	212	255	265	318	350	447	550	581
Zoology	131	142	144	178	188	223	261	269	285
Biosciences, n.e.c.	91	145	138	155	159	203	257	371	470
Psychology	1,079	1,094	1,045	1,161	1,170	1,215	1,331	1,361	1,498
Social sciences	10,204	10,685	10,523	11,330	11,935	12,271	12,883	12,773	13,041
Agricultural economics	702	765	764	768	759	737	870	916	930
Anthropology	386	402	386	445	536	582	651	655	688
Economics (except agricultural)	3,554	3,548	3,575	4,000	4,093	4,244	4,480	4,513	4,627
Geography	391	386	372	360	384	425	407	426	438
History and philosophy of science	35	40	42	51	39	41	45	45	44
Linguistics	710	850	838	943	961	952	994	1,012	1,066
Political science	2,515	2,740	2,560	2,602	2,948	2,903	2,965	2,681	2,712
Sociology	985	1,101	1,069	1,205	1,243	1,335	1,423	1,377	1,365
Sociology/anthropology	134	129	122	128	124	126	124	134	143
Social sciences, n.e.c.	792	724	795	828	848	926	924	1,014	1,028
Total, health fields	2,301	2,408	2,343	2,542	2,701	2,761	3,078	3,276	3,549
Dentistry	129	122	130	155	179	145	156	170	182
Neurology	14	27	29	34	48	69	97	102	134
Nursing	202	159	172	166	160	163	183	170	197
Pharmaceutical sciences	587	619	630	633	681	676	797	893	934
Preventive medicine/community health	695	718	662	799	810	824	872	875	975
Speech pathology/audiology	205	242	208	222	251	231	267	276	298
Veterinary sciences	93	111	110	133	138	153	161	189	201
Clinical medicine, n.e.c.	149	168	118	189	197	212	232	245	270
Health related, n.e.c.	227	242	284	211	237	288	313	356	358

1/ Includes estimated data for master's-granting institutions, were surveyed on a sample basis from 1984 through 1987. See Technical Notes for further information.

NOTE: n.e.c. = Not elsewhere classified

SOURCE: National Science Foundation/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering

Source: Selected Data on Historically Black Colleges and Universities, Academic Year 1988, National Science Foundation, February 1990

TABLE 1-51

FULL–TIME S/E GRADUATE STUDENTS IN HISTORICALLY BLACK COLLEGES AND UNIVERSITIES BY FIELD AND SEX, 1980 – 1988

Year	All Surveyed Fields	All S/E Fields	Engin–eering Total	Science Total	Physical Sciences	Chem–istry	Physics	Environ–mental Sciences	Math Sciences	Com–puter Sciences	Agri–cultural Sciences	Bio–logical Sciences	Psy–chology	Social Sciences	Health Fields
Men and Women															
1980	3318	3189	264	2925	248	295	53	30	154	139	72	640	291	1351	129
1981	3496	3354	242	3112	284	217	67	23	168	150	83	610	268	1526	142
1982	3380	3214	267	2947	288	226	58	31	206	232	87	605	227	1271	166
1983	3556	3379	311	3068	319	250	57	32	235	271	82	593	384	1152	177
1984	3937	3755	405	3350	347	269	65	39	266	320	109	536	436	1297	182
1985	3649	3466	342	3124	320	228	72	34	240	304	66	479	404	1277	183
1986	3517	3353	374	2979	299	196	84	19	265	279	55	447	419	1196	164
1987	3306	3146	375	2771	300	197	100	16	259	229	52	409	374	1132	160
1988	3507	3352	422	2930	328	204	112	13	252	261	64	396	443	1173	155
Women															
1980	1335	1240	19	1221	73	67	6	12	86	38	22	257	149	584	95
1981	1377	1274	16	1258	85	76	9	5	81	54	13	270	158	592	103
1982	1452	1318	25	1293	106	91	12	12	95	82	13	289	130	566	134
1983	1554	1409	37	1372	122	105	10	16	96	86	14	272	207	559	145
1984	1613	1465	41	1424	112	98	7	19	104	99	7	262	242	579	148
1985	1502	1357	36	1321	113	93	8	7	100	84	15	257	227	518	145
1986	1463	1334	59	1275	85	60	13	9	105	83	9	222	252	510	129
1987	1310	1180	57	1123	84	69	14	5	81	58	8	200	225	462	130
1988	1406	1301	65	1236	93	69	18	4	84	90	8	193	284	480	105
Percent Women															
1980	40.2	38.9	7.2	41.7	29.4	22.7	11.3	40.0	55.8	27.3	30.6	40.2	51.2	43.2	73.6
1981	39.4	38.0	6.6	40.4	29.9	35.0	13.4	21.7	48.2	36.0	15.7	44.3	59.0	38.8	72.5
1982	43.0	41.0	9.4	43.9	36.8	40.3	20.7	38.7	46.1	35.3	14.9	47.8	57.3	44.5	80.7
1983	43.7	41.7	11.9	44.7	38.2	42.0	17.5	50.0	40.9	31.7	17.1	45.9	53.9	48.5	81.9
1984	41.0	39.0	10.1	42.5	32.3	36.4	10.8	48.7	39.1	30.9	6.4	48.9	56.5	44.6	81.3
1985	41.2	39.2	10.5	42.3	35.3	40.8	11.1	20.6	41.7	27.6	22.7	53.7	56.2	40.6	79.2
1986	41.6	39.8	15.8	42.8	28.4	30.6	15.5	47.4	39.6	29.7	16.4	49.7	60.1	42.6	78.7
1987	39.6	37.5	15.2	40.5	28.0	35.0	14.0	31.3	31.3	25.3	15.4	48.9	60.2	40.8	81.3
1988	40.1	38.8	15.4	42.2	28.4	33.8	16.1	30.8	33.3	34.5	12.5	48.7	64.1	40.9	67.7

SOURCE: *Selected Data on Graduate Students and Postdoctorates in Science and Engineering: Fall 1990,* National Science Foundation

TABLE 1-52

PRIMARY SOURCES OF SUPPORT FOR PHDs WHO ARE U.S. CITIZENS, BY RACE/ETHNICITY AND BROAD FIELD, 1990
(in percent)

Primary Source of Support	Total U.S.	Asians	Blacks	Hispanics	Native Amers.*	Whites
Total All Fields						
Personal	48.0	30.1	62.7	47.5	59.5	48.1
University	41.8	54.4	24.8	37.2	20.3	42.1
Federal	6.6	9.6	6.3	11.3	10.8	6.3
Other	3.7	5.8	6.3	4.0	9.5	3.5
Physical Sciences†						
Personal	17.4	8.4	16.7	14.7	0.0	17.9
University	73.4	82.1	77.8	64.7	75.0	73.2
Federal	5.7	6.3	5.6	14.7	0.0	5.5
Other	3.5	3.2	0.0	5.9	25.0	3.4
Engineering						
Personal	21.5	17.1	10.5	27.3	75.0	21.7
University	59.5	65.0	47.4	39.4	25.0	59.9
Federal	9.4	4.3	5.3	24.2	0.0	9.6
Other	9.5	13.7	36.8	9.1	0.0	8.9
Life Sciences						
Personal	27.1	23.3	22.4	23.8	12.5	27.5
University	51.9	49.2	38.8	51.2	50.0	52.1
Federal	18.2	25.0	30.6	21.4	25.0	17.6
Other	2.9	2.5	8.2	3.6	12.5	2.7
Social Sciences						
Personal	58.0	44.9	48.5	49.2	61.1	59.0
University	35.6	42.0	37.1	34.9	11.1	35.5
Federal	4.2	5.8	9.1	12.7	16.7	3.7
Other	2.2	7.2	5.3	3.2	11.1	1.8
Humanities						
Personal	50.8	50.0	50.0	46.4	50.0	51.1
University	44.4	37.5	35.4	52.2	50.0	44.2
Federal	1.8	8.3	4.2	0.0	0.0	1.7
Other	3.0	4.2	10.4	1.4	0.0	2.9
Education						
Personal	81.4	70.8	81.4	85.7	77.8	81.3
University	13.0	27.1	12.1	7.1	3.7	13.2
Federal	1.8	2.1	2.5	4.0	11.1	1.7
Other	3.8	0.0	4.0	3.2	7.4	3.8
Professional/Other						
Personal	63.0	68.0	69.7	45.8	71.4	63.1
University	30.5	28.0	21.2	33.3	14.3	30.7
Federal	2.0	0.0	0.0	12.5	0.0	1.9
Other	4.5	4.0	9.1	8.3	14.3	4.2

NOTE: Percentages are based on the number of Ph.D.s with known primary support. "Personal" includes loans as well as own earnings and contributions from the spouse/family. Federally funded research assistantships (RAs) are grouped under "University" because recipients of such support may not be aware of the actual source of funding. It is believed that many of these Ph.D.s are reporting their support as university RA instead of federal RA. "Other" support includes U.S. nationally competitive fellowships, business/employer funds, foreign government, and other nonspecified sources. See Table S-2 for numbers of Ph.D.s in each field. See technical notes in Appendix C for rates of nonresponse to this question.

*Because of the small number of Native Americans (a total of 93 Ph.D.s in 1990), percentages in fields other than education and social sciences are not very meaningful. See Table S-2 for the number of Native Americans in each field.
†Includes mathematics and computer sciences.

SOURCE: Selected Data on Grduate Science/Engineeirng Students and Postdoctorates, National Science foundation

TABLE 1-53

FULL–TIME SCIENCE AND ENGINEERING GRADUATE STUDENTS IN ALL INSTITUTIONS BY SEX AND SOURCE OF MAJOR SUPPORT, 1980 – 1990

		Federal									Other Outside			
				HHS										
	All Sources	Federal Total	DoD	HHS Total	NIH	Other HHS	NSF	USDA	All Other Federal	Insti–tutional	Total	All Other U.S.	Foreign	Self Support
MEN														
1980	164,827	36,907	4,816	9,842	7,566	2,276	7,738	0	14,511	62,250	16,967	9,871	7,096	48,703
1981	165,113	35,277	5,209	9,041	7,200	1,841	7,514	0	13,513	63,671	18,149	10,541	7,608	48,016
1982	166,816	33,232	5,417	8,065	6,709	1,356	7,617	0	12,133	64,941	19,352	11,570	7,782	49,291
1983	171,399	33,709	6,270	7,641	6,650	991	7,756	0	12,042	66,599	19,345	11,733	7,612	51,746
1984	172,171	33,383	6,328	7,666	6,760	906	7,987	0	11,402	69,278	19,162	12,190	6,972	50,348
1985	174,049	33,790	6,458	7,833	6,752	1,081	8,068	1,525	9,906	70,263	20,785	14,079	6,706	49,211
1986	179,979	35,558	6,956	8,088	7,084	1,004	8,635	1,618	10,261	73,343	20,834	14,315	6,519	50,244
1987	182,952	37,102	7,653	8,868	7,745	1,123	8,946	1,899	9,736	75,471	19,669	13,669	6,000	50,710
1988	184,346	38,187	8,154	9,025	8,071	954	9,218	1,784	10,006	76,562	19,997	14,235	5,762	49,600
1990	180,000	38,270	7,223	8,434	7,787	647	9,299	1,788	11,526	76,867	19,018	13,949	5,069	45,845
Percent All Sources														
1980	100	22.4	2.9	6.0	4.6	1.4	4.7	0.0	8.8	37.8	10.3	6.0	4.3	29.5
1981	100	21.4	3.2	5.5	4.4	1.1	4.6	0.0	8.2	38.6	11.0	6.4	4.6	29.1
1982	100	19.9	3.2	4.8	4.0	0.8	4.6	0.0	7.3	38.9	11.6	6.9	4.7	29.5
1983	100	19.7	3.7	4.5	3.9	0.6	4.5	0.0	7.0	38.9	11.3	6.8	4.4	30.2
1984	100	19.4	3.7	4.5	3.9	0.5	4.6	0.0	6.6	40.2	11.1	7.1	4.0	29.2
1985	100	19.4	3.7	4.5	3.9	0.6	4.6	0.9	5.7	40.4	11.9	8.1	3.9	28.3
1986	100	19.8	3.9	4.5	3.9	0.6	4.8	0.9	5.7	40.8	11.6	8.0	3.6	27.9
1987	100	20.3	4.2	4.8	4.2	0.6	4.9	1.0	5.3	41.3	10.8	7.5	3.3	27.7
1988	100	20.7	4.4	4.9	4.4	0.5	5.0	1.0	5.4	41.5	10.8	7.7	3.1	26.9
1990	100	21.3	4.0	4.7	4.3	0.4	5.2	1.0	6.4	42.7	10.6	7.7	2.8	25.5
WOMEN														
1980	84,332	17,611	470	10,113	4,203	5,910	1,614	0	5,414	28,264	4,879	3,627	1,252	33,578
1981	87,884	16,853	487	9,346	4,241	5,105	1,668	0	5,352	30,364	5,062	3,756	1,306	35,605
1982	88,481	15,251	547	8,326	4,310	4,016	1,677	0	4,701	32,545	5,159	3,797	1,362	35,526
1983	91,096	14,814	758	7,649	4,327	3,322	1,777	0	4,630	34,187	5,948	4,518	1,430	36,147
1984	92,321	15,280	855	7,773	4,363	3,410	1,871	0	4,781	35,523	6,120	4,856	1,264	35,398
1985	93,256	16,088	890	8,388	4,498	3,890	2,118	656	4,036	36,257	6,265	5,107	1,158	34,646
1986	96,686	16,731	1,005	8,641	4,914	3,727	2,203	721	4,161	38,452	6,391	5,145	1,246	35,112
1987	99,668	17,132	1,146	8,654	5,336	3,318	2,285	789	4,258	39,217	6,312	5,102	1,210	37,007
1988	104,273	18,041	1,259	9,241	5,843	3,398	2,377	808	4,356	41,437	6,304	5,073	1,231	38,491
1990	87,621	14,605	1,134	6,232	5,629	603	2,662	887	3,690	39,240	6,033	4,990	1,043	27,743
Percent All Sources														
1980	100	20.9	0.6	12.0	5.0	7.0	1.9	0.0	6.4	33.5	5.8	4.3	1.5	39.8
1981	100	19.2	0.6	10.6	4.8	5.8	1.9	0.0	6.1	34.6	5.8	4.3	1.5	40.5
1982	100	17.2	0.6	9.4	4.9	4.5	1.9	0.0	5.3	36.8	5.8	4.3	1.5	40.2
1983	100	16.3	0.8	8.4	4.7	3.6	2.0	0.0	5.1	37.5	6.5	5.0	1.6	39.7
1984	100	16.6	0.9	8.4	4.7	3.7	2.0	0.0	5.2	38.5	6.6	5.3	1.4	38.3
1985	100	17.3	1.0	9.0	4.8	4.2	2.3	0.7	4.3	38.9	6.7	5.5	1.2	37.2
1986	100	17.3	1.0	8.9	5.1	3.9	2.3	0.7	4.3	39.8	6.6	5.3	1.3	36.3
1987	100	17.2	1.1	8.7	5.4	3.3	2.3	0.8	4.3	39.3	6.3	5.1	1.2	37.1
1988	100	17.3	1.2	8.9	5.6	3.3	2.3	0.8	4.2	39.7	6.0	4.9	1.2	36.9
1990	100	16.7	1.3	7.1	6.4	0.7	3.0	1.0	4.2	44.8	6.9	5.7	1.2	31.7

SOURCE: Selected data on graduate students and postdoctorates in science and engineering: Fall 1990, NSF 91–320.5, National Science Foundation

TABLE 1-54

FULL–TIME SCIENCE AND ENGINEERING GRADUATE STUDENTS IN ALL INSTITUTIONS BY SEX, SOURCE OF MAJOR SUPPORT, AND AREA OF STUDY, 1990

	Total Science/Eng		% Change	Engineering		Physical Sciences		Environmental Sciences		Mathematical Sciences		Computer Sciences		Life Sciences		Psychology		Social Sciences	
	No.	%	'90–88	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
MEN																			
All Sources	180,000	100	1.9	57,726	100	22,728	100	7,345	100	9,827	100	13,372	100	29,593	100	10,757	100	28,652	100
Federal Total	38,270	21.3	4.9	12,949	22.4	8,118	35.7	2,163	29.4	1,048	10.7	2,096	15.7	9,089	30.7	1,015	9.4	1,792	6.3
DoD	7,223	4.0	−9.9	4,177	7.2	1,029	4.5	322	4.4	284	2.9	980	7.3	164	0.6	100	0.9	167	0.6
HHS Total	8,434	4.7	7.1	634	1.1	1,450	6.4	18	0.2	28	0.3	50	0.4	5,591	18.9	523	4.9	140	0.5
NIH	7,787	4.3	6.2	542	0.9	1,345	5.9	12	0.2	21	0.2	43	0.3	5,391	18.2	335	3.1	98	0.3
Other	647	0.4	19.6	92	0.2	105	0.5	6	0.1	7	0.1	7	0.1	200	0.7	188	1.7	42	0.1
NSF	9,299	5.2	1.2	3,274	5.7	2,867	12.6	880	12.0	421	4.3	702	5.2	766	2.6	102	0.9	287	1.0
USDA	1,788	1.0	1.3	259	0.4	42	0.2	39	0.5	16	0.2	12	0.1	1,186	4.0	11	0.1	223	0.8
All Other Federal	11,526	6.4	19.5	4,605	8.0	2,730	12.0	904	12.3	299	3.0	352	2.6	1,382	4.7	279	2.6	975	3.4
Institutional	76,867	42.7	3.6	20,075	34.8	11,505	50.6	3,004	40.9	6,596	67.1	4,485	33.5	12,927	43.7	4,462	41.5	13,813	48.2
Other Outside	19,018	10.6	−1.6	9,114	15.8	1,537	6.8	752	10.2	461	4.7	1,064	8.0	3,471	11.7	448	4.2	2,171	7.6
All Other U.S.	13,949	7.7	0.7	7,214	12.5	1,330	5.9	525	7.1	257	2.6	776	5.8	2,414	8.2	417	3.9	1,016	3.5
Foreign	5,069	2.8	−7.7	1,900	3.3	207	0.9	227	3.1	204	2.1	288	2.2	1,057	3.6	31	0.3	1,155	4.0
Self Support	45,845	25.5	−1.6	15,588	27.0	1,568	6.9	1,426	19.4	1,722	17.5	5727	42.8	4,106	13.9	4,832	44.9	10,876	38.0
WOMEN																			
All Sources	87,621	100	1.7	8,821	100	6,845	100	2,950	100	4,043	100	3,500	100	21,053	100	20,235	100	20,174	100
Federal Total	14,605	16.7	11.1	1,958	22.2	2,215	32.4	776	26.3	298	7.4	348	9.9	6,444	30.6	1,386	6.8	1,180	5.8
DoD	1,134	1.3	0.6	439	5.0	187	2.7	87	2.9	83	2.1	149	4.3	96	0.5	59	0.3	34	0.2
HHS Total	6,232	7.1	9.3	162	1.8	666	9.7	16	0.5	21	0.5	21	0.6	4,421	21.0	751	3.7	174	0.9
NIH	5,629	6.4	10.1	132	1.5	627	9.2	9	0.3	18	0.4	19	0.5	4,248	20.2	464	2.3	112	0.6
Other	603	0.7	2.2	30	0.3	39	0.6	7	0.2	3	0.1	2	0.1	173	0.8	287	1.4	62	0.3
NSF	2,662	3.0	12.9	598	6.8	709	10.4	311	10.5	79	2.0	117	3.3	516	2.5	159	0.8	173	0.9
USDA	887	1.0	11.6	34	0.4	12	0.2	24	0.8	7	0.2	2	0.1	680	3.2	26	0.1	102	0.5
All Other Federal	3,690	4.2	16.5	725	8.2	641	9.4	338	11.5	108	2.7	59	1.7	731	3.5	391	1.9	697	3.5
Institutional	39,240	44.8	5.1	3,197	36.2	3,734	54.6	1,266	42.9	2,884	71.3	1,107	31.6	9,606	45.6	7,737	38.2	9,709	48.1
Other Outside	6,033	6.9	6.9	1,356	15.4	472	6.9	229	7.8	101	2.5	237	6.8	1,915	9.1	694	3.4	1,029	5.1
All Other U.S.	4,990	5.7	9.9	1,182	13.4	425	6.2	181	6.1	70	1.7	174	5.0	1,587	7.5	669	3.3	702	3.5
Foreign	1,043	1.2	−5.2	174	2.0	47	0.7	48	1.6	31	0.8	63	1.8	328	1.6	25	0.1	327	1.6
Self Support	27,743	31.7	−7.8	2,310	26.2	424	6.2	679	23.0	760	18.8	1808	51.7	3,088	14.7	10,418	51.5	8,256	40.9

SOURCE: Doctorate Records File of the National Research Council

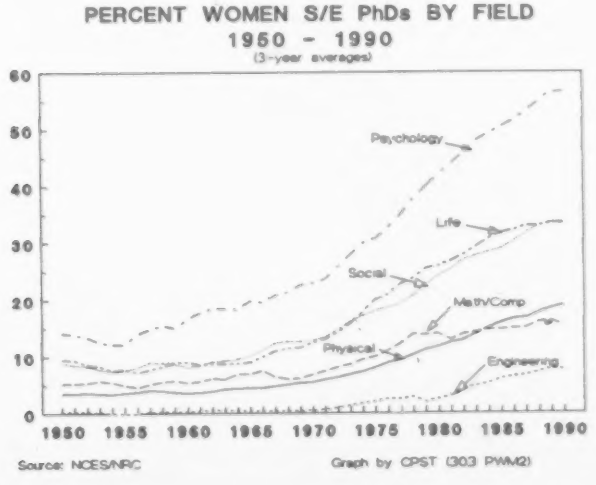
TABLE 2-1

PhD AWARDS BY FIELD, DECADE AND SEX, 1920 – 1989

	DECADE							TOTAL
	1920–29	1930–39	1940–49	1950–59	1960–69	1970–79	1980–89	1920–89
All Fields (1)	11919	25654	30575	80262	162019	318100	318816	947345
Physical Sciences	3271	6687	8202	18745	34307	48182	46582	165976
Engineering	228	833	1439	5765	19042	29683	32329	89319
Life Sciences	2370	5081	5822	14495	26461	49344	57332	160905
Social Sciences*	1898	3556	4001	13692	25120	59762	59961	167990
Total S/E	7767	16157	19464	52697	104930	186971	196204	584190
Humanities	2408	5265	5168	11361	22685	46541	35694	129122
Professional Flds.	551	1018	1179	2717	6474	14128	18018	44085
Education	1153	3122	4759	13479	27531	70460	68698	189202
	WOMEN							
All Fields (1)	1826	3784	4115	7972	18964	66202	108074	210937
Physical Sciences	247	442	406	685	1577	3946	7076	14379
Engineering	2	6	7	20	77	424	1913	2449
Life Sciences	378	765	738	1318	3078	8921	18337	33535
Social Sciences*	325	562	580	1510	3604	14641	24126	45348
Total S/E	952	1775	1731	3533	8336	27932	51452	95711
Humanities	619	1291	1182	1758	4423	14625	15521	39419
Professional Flds.	38	78	113	249	798	2387	5769	9432
Education	209	615	1086	2431	5367	21258	35227	66193
	PERCENT WOMEN							
All Fields (1)	15.3	14.8	13.5	9.9	11.7	20.8	33.9	22.3
Physical Sciences	7.6	6.6	5.0	3.7	4.6	8.2	15.2	8.7
Engineering	0.9	0.7	0.5	0.3	0.4	1.4	5.9	2.7
Life Sciences	15.9	15.1	12.7	9.1	11.6	18.1	32.0	20.8
Social Sciences*	17.1	15.8	14.5	11.0	14.3	24.5	40.2	27.0
Total S/E	12.3	11.0	8.9	6.7	7.9	14.9	26.2	16.4
Humanities	25.7	24.5	22.9	15.5	19.5	31.4	43.5	30.5
Professional Flds.	6.9	7.7	9.6	9.2	12.3	16.9	32.0	21.4
Education	18.1	19.7	22.8	18.0	19.5	30.2	51.3	35.0

(1) Includes other and unspecified. * Includes Psychology

CHART 2-1



Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates

TABLE 2-2

DOCTORAL RECIPIENTS, 1991

FIELD	Total	Women	%W	Foreign Temp.		U.S. Minorities							
						Indian		Asian		Black		Hispanic	
				No.	%F	No.	%*	No.	%*	No.	%*	No.	%*
ALL FIELDS	37,451	13,765	36.7	8,850	23.6	130	0.3	1491	4.0	1082	2.9	843	2.3
PHYSICAL SCIENCES	6,276	1,154	18.3	2,211	35.2	14	0.2	306	4.9	53	0.8	99	1.6
Physics/Astronomy	1,408	152	10.7	546	38.8	1	0.1	49	3.5	9	0.6	19	1.3
Chemistry	2,194	507	23.1	659	30.0	9	0.4	118	5.4	22	1.0	44	2.0
Earth, Atmos, & Mar.	837	185	22.1	188	22.5	3	0.4	17	2.0	3	0.4	16	1.9
Mathematics	1,040	194	18.6	480	46.2	0	0.0	57	5.5	11	1.1	9	0.9
Computer Science	797	116	14.5	338	42.4	1	0.1	65	8.2	8	1.0	11	1.4
ENGINEERING	5,212	452	8.67	2473	47.4	6	0.1	401	7.7	55	1.1	59	1.1
LIFE SCIENCES	6,928	2,674	38.5	1,686	24.3	19	0.3	324	4.7	116	1.7	126	1.8
Biological Sciences	4,642	1759	37.8	1027	22.1	10	0.2	255	5.5	57	1.2	93	2.0
Health Sciences	1,049	670	63.8	164	15.6	5	0.5	42	4.0	40	3.8	15	1.4
Agricultural Sciences	1,237	245	19.8	495	40.0	4	0.3	27	2.2	19	1.5	18	1.5
NATURAL SCIENCE & ENG	18,416	4,280	23.2	6,370	34.6	39	0.2	1,031	5.6	224	1.2	284	1.5
SOCIAL SCIENCES (incl Psy)	6,127	3026	49.3	961	15.7	21	0.3	154	2.5	231	3.8	197	3.2
Psychology	3,240	1984	61.2	121	3.7	13	0.4	56	1.7	116	3.6	117	3.6
Anthropol/Sociology	806	366	45.4	137	17.0	3	0.4	25	3.1	31	3.8	32	4.0
Economics	852	173	20.3	401	47.1	1	0.1	34	4.0	23	2.7	12	1.4
Poli. Sci. & Int'l. Relat.	522	142	27.2	115	22.0	2	0.4	16	3.1	20	3.8	15	2.9
Other Social Sciences	707	361	51.0	187	26.4	2	0.3	23	3.3	41	5.8	21	3.0
TOTAL SCIENCE & ENG	24,543	7,306	29.7	7,331	29.9	60	0.2	1,185	4.8	455	1.9	481	2.0
NON-SCIENCE	12,908	6,459	50.0	1,519	11.8	70	0.5	306	2.4	627	4.9	362	2.8
HUMANITIES	4,094	1904	46.5	510	12.5	10	0.2	84	2.1	101	2.5	144	3.5
History	658	247	37.5	69	10.5	0	0.0	8	1.2	26	4.0	10	1.5
Amer. & Eng. Lang.& Lit.	853	483	56.6	78	9.1	2	0.2	13	1.5	26	3.0	12	1.4
Foreign Lang. & Lit.	498	299	60.0	87	17.5	1	0.2	12	2.4	8	1.6	71	14.3
Other Humanities	2,085	875	41.9	276	13.2	7	0.3	51	2.4	41	2.0	51	2.4
EDUCATION	6,397	3718	58.1	481	7.5	53	0.8	124	1.9	438	6.8	184	2.9
PROFESSIONAL/OTHER	2,417	837	34.6	528	21.8	7	0.3	98	4.1	88	3.6	34	1.4
Business & Management	1,164	292	25.0	329	28.3	2	0.2	60	5.2	22	1.9	10	0.9
Other Professional Flds.	829	348	41.9	124	15.0	4	0.5	35	4.2	62	7.5	21	2.5
Other Fields	81	40	49.3	14	17.3	1	1.2	3	3.7	4	4.9	3	3.7

This table is a replacement for Table 2-2, because of an error in computing the subtotals for natural science and engineering and for total science and engineering.

TABLE 2-3

DOCTORATE RECIPIENTS, 1990

FIELD	Total	Women	%W	Foreign Temp.		U.S. Minorities							
						Indian		Asian		Black		Hispanic	
				No.	%F	No.	%I	No.	%A	No.	%B	No.	%H
ALL FIELDS	36,027	13,061	36.3	7,744	21.5	93	0.3	1,260	3.5	972	2.7	813	2.3
PHYSICAL SCIENCES	5,859	1,068	18.2	1,868	31.9	5	0.1	249	4.2	34	0.6	98	1.7
Mathematics	892	158	17.7	413	46.3	1	0.1	25	2.8	4	0.4	10	1.1
Computer Science	704	110	15.6	263	37.4	0	0.0	46	6.5	1	0.1	5	0.7
Physics & Astronomy	1,392	149	10.7	511	36.7	0	0.0	63	4.5	5	0.4	15	1.1
Chemistry	2,102	502	23.9	510	24.3	3	0.1	98	4.7	22	1.0	55	2.6
Earth, Atmos, & Marine Sci.	769	149	19.4	171	22.2	1	0.1	17	2.2	2	0.3	13	1.7
ENGINEERING	4,892	414	8.5	2,191	44.8	4	0.1	345	7.1	40	0.8	53	1.1
LIFE SCIENCES	6,613	2,474	37.4	1,463	22.1	8	0.1	262	4.0	91	1.4	128	1.9
Biological Sciences	4,333	1,606	37.1	821	18.9	3	0.1	193	4.5	41	0.9	88	2.0
Health Sciences	960	595	62.0	157	16.4	1	0.1	37	3.9	30	3.1	17	1.8
Agricultural Sciences	1,320	273	20.7	485	36.7	4	0.3	32	2.4	20	1.5	23	1.7
NATURAL SCIENCE & ENG	17,364	3,956	22.8	5,522	31.8	17	0.1	856	4.9	165	1.0	279	1.6
SOCIAL SCIENCES (incl Psy	6,076	2,815	46.3	859	14.1	23	0.4	139	2.3	204	3.4	185	3.0
Psychology	3,267	1,906	58.3	116	3.6	18	0.6	51	1.6	110	3.4	103	3.2
Anthropology	324	172	53.1	31	9.6	1	0.3	8	2.5	3	0.9	12	3.7
Economics	836	169	20.2	332	39.7	1	0.1	30	3.6	19	2.3	14	1.7
Poli. Sci. & Int. Rel.	462	107	23.2	114	24.7	1	0.2	12	2.6	30	6.5	17	3.7
Sociology	427	206	48.2	93	21.8	1	0.2	15	3.5	20	4.7	27	6.3
Other Social Sciences	760	255	33.6	173	22.8	1	0.1	23	3.0	22	2.9	12	1.6
TOTAL SCIENCE & ENG.	23,440	6,771	28.9	6,381	27.2	40	0.2	995	4.2	369	1.6	464	2.0
NON-SCIENCE	12,587	6,290	50.0	1,363	10.8	53	0.4	265	2.1	603	4.8	349	2.8
HUMANITIES	3,820	1,741	45.6	388	10.2	8	0.2	75	2.0	73	1.9	132	3.5
EDUCATION	6,484	3,736	57.6	482	7.4	36	0.6	98	1.5	459	7.1	182	2.8
PROFESSIONAL FIELDS	2,283	813	35.6	493	21.6	9	0.4	92	4.0	71	3.1	35	1.5
Business & Management	1,038	266	25.6	309	29.8	2	0.2	58	5.6	15	1.4	10	1.0
Communications	322	143	44.4	50	15.5	4	1.2	9	2.8	17	5.3	6	1.9
Other Professional Fields	856	366	42.8	120	14.0	3	0.4	23	2.7	33	3.9	19	2.2
Other Fields	67	38	56.7	14	20.9		0.0	2	3.0	6	9.0		0.0

Source: **Digest of Education Statistics 1990,** U.S. Department of Education

TABLE 2-4

DEGREES FROM TRADITIONALLY BLACK INSTITUTIONS BY CONTROL, LEVEL AND SEX, 1988

Item	Total	Public		Private	
		4-year	2-year	4-year	2-year
1	2	3	4	5	6
Earned degrees conferred, 1987-88					
Associate	1,785	1,071	338	182	196
Men	587	380	91	92	64
Women	1,188	711	255	90	132
Bachelor's	19,711	12,980	—	6,731	—
Men	8,165	5,611	—	2,554	—
Women	11,546	7,369	—	4,177	—
Master's	4,036	3,184	—	852	—
Men	1,811	1,252	—	359	—
Women	2,425	1,932	—	493	—
Doctor's	203	54	—	149	—
Men	110	27	—	83	—
Women	93	27	—	66	—
First-professional	775	264	—	511	—
Men	455	153	—	302	—
Women	320	111	—	209	—

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 2-5

PhDs AWARDED TO U.S. MINORITIES & FOREIGN CITIZENS IN ALL FIELDS AND IN SCIENCE* AND ENGINEERING, 1975 – 1991

Year	Total Degrees	U.S. Citizens												Foreign Citizens			
		Total U.S.	Black		Hispanic		Am. Indian		Asian		All Minor.			Temp. Visa		Perm. Visa	
			No.	%	No.	%	No.	%	No.	%	No.	%		No.	%	No.	%
ALL FIELDS																	
1975	32,913	27,081	999	3.0	303	0.9	36	0.1	286	0.9	1,624	4.9		3,531	10.7	1,709	5.2
1976	32,923	27,269	1,095	3.3	340	1.0	40	0.1	334	1.0	1,809	5.5		3,518	10.7	1,491	4.5
1977	31,672	26,119	1,116	3.5	423	1.3	65	0.2	339	1.1	1,943	6.1		3,447	10.9	1,364	4.3
1978	30,650	25,291	1,033	3.3	473	1.5	60	0.2	390	1.3	1,956	6.3		3,416	11.1	1,343	4.4
1979	31,200	25,464	1,056	3.4	462	1.5	81	0.3	426	1.4	2,027	6.5		3,587	11.5	1,320	4.2
1980	31,020	25,222	1,032	3.3	412	1.4	75	0.2	458	1.5	1,977	6.4		3,644	11.7	1,290	4.2
1981	31,357	25,061	1,013	3.2	464	1.5	85	0.3	465	1.5	2,027	6.5		3,940	12.5	1,281	4.1
1982	31,111	24,391	1,047	3.4	535	1.7	77	0.2	452	1.5	2,111	6.8		4,204	13.5	1,228	3.9
1983	31,282	24,359	922	3.0	539	1.7	81	0.3	492	1.6	2,034	6.5		4,499	14.4	1,275	4.1
1984	31,337	24,027	953	3.0	536	1.7	74	0.2	512	1.6	2,075	6.6		4,832	15.4	1,224	3.9
1985	31,297	23,370	912	2.9	561	1.8	96	0.3	516	1.7	2,085	6.7		5,228	16.7	1,324	4.2
1986	31,895	23,081	823	3.0	571	2.1	99	0.3	530	3.3	2,023	8.7		5,276	16.6	1,432	4.5
1987	32,364	22,983	768	2.8	618	2.2	115	0.4	542	3.6	2,043	9.0		5,610	17.3	1,578	4.9
1988	33,490	23,287	814	2.4	597	1.8	94	0.3	614	1.8	2,119	6.3		6,195	18.5	1,624	4.8
1989	34,319	23,398	821	2.4	582	1.7	94	0.3	625	1.8	2,122	6.2		6,648	19.4	1,626	4.7
1990	36,027	24,190	828	2.3	698	1.9	93	0.3	617	1.7	2,236	6.2		7,744	21.5	1,654	4.6
1991	37,451	24,721	933	2.5	710	1.9	130	0.3	762	2.0	2,535	6.8		8,852	23.6	1,814	4.8
Totals	552,508	419,314	16,165	2.9	8,824	1.6	1,395	0.3	8,362	1.5	34,746	6.3		84,171	15.2	24,577	4.4
SCIENCE* AND ENGINEERING																	
1975	19,048	14,475	261	1.4	137	0.7	14	0.1	201	1.1	613	3.2		2,797	14.7	1,290	6.8
1976	18,790	14,342	272	1.4	122	0.6	10	0.1	254	1.4	658	3.5		2,772	14.8	1,133	6.0
1977	18,281	13,889	305	1.7	162	0.9	29	0.2	241	1.3	737	4.0		2,678	14.6	1,028	5.6
1978	17,956	13,609	304	1.7	180	1.0	21	0.1	286	1.6	791	4.4		2,606	14.5	1,013	5.6
1979	18,247	13,524	315	1.7	180	1.0	27	0.1	315	1.7	837	4.6		2,657	14.9	945	5.4
1980	17,523	13,410	276	1.5	171	1.0	28	0.2	325	1.8	812	4.5		2,710	15.3	952	5.4
1981	17,996	13,544	282	1.6	198	1.1	31	0.2	330	1.8	864	4.6		2,962	16.0	893	5.0
1982	18,017	13,292	285	1.6	226	1.2	40	0.2	327	1.8	907	4.8		3,127	17.0	854	4.7
1983	18,393	13,403	283	1.6	237	1.3	29	0.2	345	1.9	917	4.9		3,400	18.3	898	4.9
1984	18,514	13,250	299	1.7	254	1.4	32	0.2	384	2.1	1,006	5.3		3,692	19.5	835	4.5
1985	18,712	12,947	278	1.5	244	1.3	40	0.2	373	2.0	967	5.0		4,026	21.3	929	4.9
1986	19,251	12,869	254	1.7	276	1.8	57	0.3	397	4.2	1,563	7.9		4,141	21.1	987	5.1
1987	19,707	12,820	234	1.7	305	1.7	55	0.3	443	4.7	1,683	8.3		4,450	22.1	1,086	5.5
1988	20,741	13,217	260	1.3	327	1.5	45	0.2	451	2.2	1,119	5.2		4,920	23.2	1,129	5.3
1989	21,530	13,311	284	1.3	310	1.4	45	0.2	487	2.3	1,126	5.2		5,378	25.0	1,121	5.2
1990	22,673	13,618	264	1.2	376	1.7	45	0.2	467	2.1	1,152	5.1		6,286	27.7	1,158	5.1
1991	24,553	14,555	360	1.5	401	1.6	55	0.2	598	2.4	1,414	5.8		7,331	29.9	1,289	5.2
Totals	329,932	230,075	4,816	1.5	4,106	1.2	603	0.2	6,224	1.9	17,166	5.2		65,935	20.0	17,540	5.3

* Includes Social and Behavioral Sciences

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates

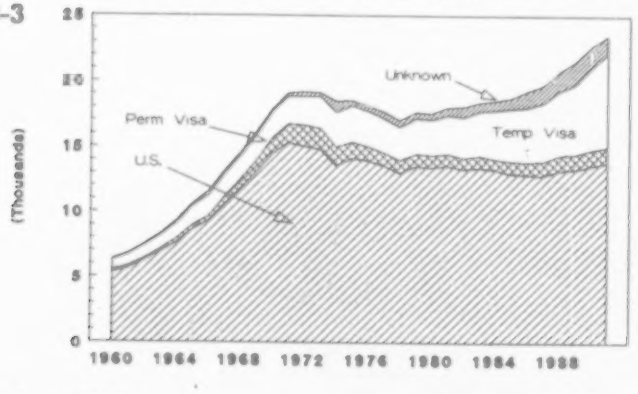
TABLE 2-6

SCIENCE/ENGINEERING PhD AWARDS BY CITIZENSHIP AND VISA TYPE, 1960 – 1991

YEAR	TOTAL	U.S.		FOREIGN						Citizen-ship Unknown
				TOTAL		Immigrant		Non-Immigrant		
		Number	%	Number	%	Number	%	Number	%	
1960	6,316	5,301	83.9	966	15.3	223	3.5	743	11.8	49
1961	6,757	5,632	83.4	1,032	15.3	182	2.7	850	12.6	93
1962	7,493	6,231	83.2	1,174	15.7	138	1.8	1,036	13.8	88
1963	8,279	6,884	83.2	1,258	15.2	234	2.8	1,024	12.4	137
1964	9,297	7,625	82.0	1,488	16.0	294	3.2	1,194	12.8	184
1965	10,542	8,590	81.5	1,797	17.0	357	3.4	1,440	13.7	155
1966	11,537	9,263	80.3	1,978	17.1	369	3.2	1,609	13.9	296
1967	13,065	10,561	80.8	2,253	17.2	568	4.3	1,685	12.9	251
1968	14,526	11,808	81.3	2,489	17.1	678	4.7	1,811	12.5	229
1969	16,075	13,080	81.4	2,721	16.9	842	5.2	1,879	11.7	274
1970	17,840	14,494	81.2	3,165	17.7	1,136	6.4	2,029	11.4	181
1971	19,078	15,300	80.2	3,514	18.4	1,411	7.4	2,103	11.0	264
1972	19,127	15,005	78.4	3,812	19.9	1,632	8.5	2,180	11.4	310
1973	19,121	14,788	77.3	4,004	20.9	1,565	8.2	2,439	12.8	329
1974	18,460	13,560	73.5	4,050	21.9	1,388	7.5	2,662	14.4	850
1975	18,488	14,107	76.3	4,015	21.7	1,257	6.8	2,758	14.9	366
1976	18,089	13,947	77.1	3,762	20.8	1,049	5.8	2,713	15.0	380
1977	17,641	13,538	76.7	3,609	20.5	982	5.6	2,627	14.9	494
1978	17,034	13,009	76.4	3,472	20.4	970	5.7	2,502	14.7	553
1979	17,589	13,524	76.6	3,602	20.5	945	5.4	2,657	15.1	463
1980	17,524	13,410	76.5	3,662	20.6	952	5.3	2,710	15.3	452
1981	17,996	13,544	75.5	3,855	21.0	893	5.0	2,962	16.0	597
1982	18,017	13,292	73.9	3,981	21.8	854	4.7	3,127	17.0	744
1983	18,393	13,403	73.1	4,298	23.2	898	4.9	3,400	18.3	692
1984	18,514	13,250	72.0	4,527	24.0	835	4.5	3,692	19.5	737
1985	18,712	12,946	69.4	4,957	26.1	929	4.9	4,028	21.2	809
1986	19,251	12,869	67.2	5,128	26.2	987	5.1	4,141	21.1	1,254
1987	19,707	12,820	65.4	5,536	27.6	1,086	5.5	4,450	22.1	1,351
1988	20,741	13,217	63.7	6,049	29.2	1,129	5.4	4,920	23.7	1,475
1989	21,530	13,311	61.8	6,499	30.2	1,121	5.2	5,378	25.0	1,720
1990	22,673	13,618	60.1	7,444	32.8	1,158	5.1	6,286	27.7	1,611
1991	23,494	13,790	58.7	8,399	35.7	1,232	5.2	7,167	30.5	1,305
TOTAL	522,906	385,717	73.8	118,496	22.7	28,294	5.4	90,202	17.3	18,693

SCIENCE & ENGINEERING PhDs BY CITIZENSHIP & VISA TYPE, 1960-91

CHART 2-3



Source: NRC/NSF

Graph by CPST (249, 2)

Source: Summary Report 1990, Doctorate Recipients from United States Universities, National Research Council

TABLE 2-7

DOCTORAL RECIPIENTS WHO ARE U.S. CITIZENS# BY FIELD, SEX AND RACIAL/ETHNIC GROUP, 1990

FIELD	Total	Total U.S.		U.S. Women		Am Ind.		Asian		Black		Hispanic		Minorities		White	
		No.	%	No.	%*	No.	%*	No.	%*	No.	%*	No.	%*	No.	%*	No.	%*
ALL FIELDS	36,027	23,886	66.3	10,347	43.3	93	0.4	617	2.6	828	3.5	698	2.9	2,236	9.4	21,650	90.6
PHYSICAL SCIENCES	5,859	3,237	55.2	671	20.7	5	0.2	108	3.3	23	0.7	83	2.6	219	6.8	3,018	93.2
Physics/Astronomy	1,392	694	49.9	60	8.6	0	0.0	32	4.6	4	0.6	13	1.9	49	7.1	645	92.9
Chemistry	2,102	1,334	63.5	336	25.2	3	0.2	53	4.0	12	0.9	48	3.6	116	8.7	1,218	91.3
Earth, Atmos, & Mar.	769	512	66.6	117	22.9	1	0.2	4	0.8	2	0.4	11	2.1	18	3.5	494	96.5
Mathematics	892	362	40.6	80	22.1	1	0.3	9	2.5	4	1.1	7	1.9	21	5.8	341	94.2
Computer Science	704	335	47.6	78	23.3	0	0.0	10	3.0	1	0.3	4	1.2	15	4.5	320	95.5
ENGINEERING	4,892	1,892	38.7	241	12.7	4	0.2	152	19.0	28	43.0	39	2.1	223	11.8	1,669	88.2
LIFE SCIENCES	6,613	4,443	67.2	1,845	41.5	8	0.2	149	3.4	63	1.4	103	2.3	323	7.3	4,120	92.7
Biological Sciences	4,333	3,058	70.6	1,196	39.1	3	0.1	113	3.7	28	0.9	72	2.4	216	7.1	2,842	92.9
Health Sciences	960	704	73.3	490	69.6	1	0.1	26	3.7	23	3.3	17	2.4	67	9.5	637	90.5
Agricultural Sciences	1,320	681	51.6	159	23.3	4	0.6	10	1.5	12	1.8	14	2.1	40	5.9	641	94.1
SOCIAL SCIENCES (incl Psy)	6,076	4,440	73.1	2,317	52.2	23	0.5	82	1.8	172	3.9	164	3.7	441	9.9	3,999	90.1
Psychology	3,267	2,766	84.7	1,632	59.0	18	0.7	42	1.5	107	3.9	94	3.4	261	9.4	2,505	90.6
Anthropology	324	264	81.5	148	56.1	1	0.4	6	2.3	2	0.8	11	4.2	20	7.6	244	92.4
Economics	836	380	45.5	103	27.1	1	0.3	12	3.2	13	3.4	11	2.9	37	9.7	343	90.3
Poli. Sci. & Int'l. Relat.	558	356	63.8	105	29.5	1	0.3	4	1.1	17	4.8	16	4.5	38	10.7	318	89.3
Sociology	427	289	67.7	158	54.7	1	0.3	10	3.5	18	6.2	20	6.9	49	17.0	240	83.0
Other Social Sciences	664	385	58.0	171	44.4	1	0.3	8	2.1	15	3.9	12	3.1	36	9.4	349	90.6
HUMANITIES	3,820	2,955	77.4	1,387	46.9	8	0.3	34	1.2	70	2.4	107	3.6	219	7.4	2,736	92.6
History	611	503	82.3	168	33.4	1	0.2	8	1.6	19	3.8	7	1.4	35	7.0	468	93.0
Amer. & Eng. Lang.& Lit.	796	683	85.8	392	57.4	1	0.1	7	1.0	18	2.6	15	2.2	41	6.0	642	94.0
Foreign Lang. & Lit.	530	324	61.1	195	60.2	1	0.3	4	1.2	3	0.9	55	17.0	63	19.4	261	80.6
Other Humanities	1,883	1,445	76.7	632	43.7	5	0.3	15	1.0	30	2.1	30	2.1	80	5.5	1,365	94.5
EDUCATION	6,484	5,434	83.8	3,232	59.5	36	0.7	61	1.1	420	7.7	172	3.2	689	12.7	4,745	87.3
PROFESSIONAL/OTHER	2,283	1,485	65.0	654	44.0	9	0.6	31	2.1	52	3.5	30	2.0	122	8.2	1,363	91.8
Business & Managemen	1,038	573	55.2	212	37.0	2	0.3	13	2.3	10	4.0	9	1.6	34	5.9	539	94.1
Communications	322	235	73.0	118	50.2	4	1.7	2	0.9	8	3.4	4	1.7	18	7.7	217	92.3
Other Professional Flds.	856	637	74.4	298	46.8	3	0.5	14	2.2	29	4.6	17	2.7	63	9.9	574	90.1
Other Fields	67	40	59.7	26	65.0	0	0.0	2	5.0	5	12.5	0	0.0	7	17.5	33	82.5

* Percent of U.S. citizens. # Includes foreign citizens with permanent visas.

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates

TABLE 2-8

DOCTORAL RECIPIENTS WHO ARE U.S. CITIZENS# BY FIELD, SEX AND RACIAL/ETHNIC GROUP, 1991

FIELD	Total	Total U.S.		U.S. Women		Am Ind.		Asian		Black		Hispanic		Minorities		White	
		No.	%	No.	%*	No.	%*	No.	%*	No.	%*	No.	%*	No.	%*	No.	%*
ALL FIELDS	37,451	26,535	70.9	10,836	40.8	130	0.5	1491	5.6	1082	4.1	843	3.2	3,546	13.4	22,604	85.2
PHYSICAL SCIENCES	6,276	3,771	60.1	712	18.9	14	0.4	306	8.1	53	1.4	99	2.6	472	12.5	3,229	85.6
Physics/Astronomy	1,408	806	57.2	71	8.8	1	0.1	49	6.1	9	1.1	19	2.4	78	9.7	704	87.3
Chemistry	2,194	1,420	64.7	329	23.2	9	0.6	118	8.3	22	1.5	44	3.1	193	13.6	1,210	85.2
Earth, Atmos, & Mar.	837	610	72.9	143	23.4	3	0.5	17	2.8	3	0.5	16	2.6	39	6.4	557	91.3
Mathematics	1,040	494	47.5	88	17.8	0	0.0	57	11.5	11	2.2	9	1.8	77	15.6	410	83.0
Computer Science	797	441	55.3	81	18.4	1	0.2	65	14.7	8	1.8	11	2.5	85	19.3	348	78.9
ENGINEERING	5,212	2,358	45.2	267	11.3	6	0.3	401	19.0	55	43.0	59	2.5	521	22.1	1,788	75.8
LIFE SCIENCES	6,928	4,965	71.7	1,951	39.3	19	0.4	324	6.5	116	2.3	126	2.5	585	11.8	4,300	86.6
Biological Sciences	4,642	3,455	74.4	1,261	36.5	10	0.3	255	7.4	57	1.6	93	2.7	415	12.0	2,988	86.5
Health Sciences	1,049	822	78.4	547	66.5	5	0.6	42	5.1	40	4.9	15	1.8	102	12.4	708	86.1
Agricultural Sciences	1,237	688	55.6	143	20.8	4	0.6	27	3.9	19	2.8	18	2.6	68	9.9	604	87.8
SOCIAL SCIENCES (incl Psy)	6,127	4,750	77.5	2,498	52.6	21	0.4	154	3.2	231	4.9	197	4.1	603	12.7	4,087	86.0
Psychology	3,240	2,856	88.1	1,752	61.3	13	0.5	56	2.0	116	4.1	117	4.1	302	10.6	2,538	88.9
Anthropol/Sociology	806	633	78.5	344	54.3	3	0.5	25	3.9	31	4.9	32	5.1	91	14.4	536	84.7
Economics	852	413	48.5	95	23.0	1	0.2	34	8.2	23	5.6	12	2.9	70	16.9	331	80.1
Poli. Sci. & Int'l. Relat.	522	376	72.0	105	27.9	2	0.5	16	4.3	20	5.3	15	4.0	53	14.1	316	84.0
Other Social Sciences	707	472	66.8	202	42.8	2	0.4	23	4.9	41	8.7	21	4.4	87	18.4	366	77.5
HUMANITIES	4,094	3,390	82.8	1,480	43.7	10	0.3	84	2.5	101	3.0	144	4.2	339	10.0	2,992	88.3
History	658	552	83.9	203	36.8	0	0.0	8	1.4	26	4.7	10	1.8	44	8.0	491	88.9
Amer. & Eng. Lang.& Lit.	853	743	87.1	406	54.6	2	0.3	13	1.7	26	3.5	12	1.6	53	7.1	683	91.9
Foreign Lang. & Lit.	498	991	199.0	187	18.9	1	0.1	12	1.2	8	0.8	71	7.2	92	9.3	893	90.1
Other Humanities	2,085	1,104	52.9	684	62.0	7	0.6	51	4.6	41	3.7	51	4.6	150	13.6	925	83.8
EDUCATION	6,397	5,593	87.4	3,255	58.2	53	0.9	124	2.2	438	7.8	184	3.3	799	14.3	4,748	84.9
PROFESSIONAL/OTHER	2,417	1,708	70.7	673	39.4	7	0.4	98	5.7	88	5.2	34	2.0	227	13.3	1,460	85.5
Business & Managemen	1,164	747	64.2	228	30.5	2	0.3	60	8.0	22	4.0	10	1.3	94	12.6	644	86.2
Other Professional Flds.	829	905	109.2	414	45.7	4	0.4	35	3.9	62	4.0	21	2.3	122	13.5	775	85.6
Other Fields	81	53	65.4	31	58.5	1	1.9	3	5.7	4	7.5	3	5.7	11	20.8	41	77.4

* Percent of U.S. citizens. # Includes foreign citizens with permanent visas.

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 2-9

Ph D AWARDS TO U.S. CITIZENS BY BROAD FIELD, RACIAL/ETHNIC GROUP AND SEX
1975 – 1991

Year	Total*	Men*	Wom*	%W	Am. Ind. Men	Am. Ind. Wom	Asian Men	Asian Wom	Black Men	Black Wom	Hispanic Men	Hispanic Wom	% Min	White Men	White Wom
TOTAL ALL FIELDS															
1975	27081	20662	6419	24	27	9	222	64	650	349	242	61	6.3	18636	5716
1976	27269	20427	6842	25	31	9	244	90	652	443	253	87	6.9	18371	6002
1977	26119	19155	6964	27	43	22	251	88	684	432	310	113	7.8	17011	6054
1978	25291	17936	7355	29	50	10	287	103	584	449	317	156	7.7	15573	6238
1979	25464	17580	7884	31	56	25	311	117	551	505	308	154	8.0	15261	6659
1980	25221	16875	8346	33	46	29	313	145	499	533	256	156	7.8	14848	7145
1981	25061	16360	8701	35	56	29	315	150	499	514	275	189	8.1	14459	7521
1982	24391	15562	8829	36	44	33	281	171	483	564	344	191	8.7	13990	7690
1983	24359	15120	9239	38	50	31	312	180	413	509	288	251	8.4	13610	8090
1984	24027	14730	9297	39	54	20	338	174	427	526	314	222	8.6	13171	8179
1985	23368	14221	9147	39	40	56	329	187	379	533	300	261	8.9	12810	7953
1986	23080	13635	9445	41	58	41	347	183	322	500	302	269	8.8	12307	8321
1987	22979	13572	9407	41	62	53	369	173	317	451	332	286	8.9	12167	8295
1988	23273	13714	9559	41	52	42	414	200	315	499	323	274	9.1	12343	8438
1989	23398	13395	10003	43	49	45	441	184	327	494	309	273	9.1	11987	8905
1990	24886	14151	10735	43	52	44	426	214	350	547	378	340	9.4	12679	9477
1991	24721	13885	10836	44	73	55	469	293	385	548	358	350	10.2	12364	9495
Total	**419988**	**270980**	**149008**	**35**	**843**	**553**	**5669**	**2716**	**7837**	**8396**	**5209**	**3633**	**8.3**	**241587**	**130178**
LIFE SCIENCES															
1975	3471	2776	695	20	1	1	33	21	37	19	34	5	4.4	2880	770
1976	3335	2671	664	20	3		54	23	40	31	26	3	5.4	2904	755
1977	3279	2467	812	25	3	1	46	24	30	28	21	9	4.9	2367	750
1978	3522	2744	778	22	7		54	24	33	24	23	11	5.0	2455	677
1979	3674	2814	860	23	3		58	30	20	21	26	12	4.6	2527	756
1980	3794	2816	978	26	4	2	57	36	31	18	20	10	4.7	2526	869
1981	3891	2859	1032	27	6	1	65	33	24	28	31	11	5.1	2599	916
1982	3964	2851	1113	28	6	4	61	43	24	24	33	17	5.3	2632	1000
1983	3859	2688	1171	30	4	1	67	49	27	22	22	19	5.5	2499	1061
1984	3910	2773	1137	29	8	3	67	43	28	27	30	13	5.6	2559	1031
1985	3832	2679	1153	30	8	9	74	40	28	21	35	24	6.2	2477	1038
1986	3703	2512	1191	32	11	6	82	54	25	22	33	26	7.0	2315	1068
1987	3566	2372	1194	33	9	4	75	48	27	25	41	23	7.1	2163	1075
1988	3670	2380	1290	35	8	4	69	41	22	22	51	23	6.5	2185	1186
1989	3724	2378	1346	36	5	4	77	50	27	24	53	18	6.9	2161	1232
1990	3889	2493	1396	36	7	1	86	42	27	21	55	31	6.9	2266	1290
1991	3864	2460	1404	36	10	4	95	68	25	25	50	36	8.1	2241	1253
Total	**62947**	**44733**	**18214**	**29**	**103**	**45**	**1120**	**669**	**475**	**402**	**584**	**291**	**5.9**	**41756**	**16727**

* Includes those whose race/ethnicity is not known.

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 2-9 (continued)

Ph D AWARDS TO U.S. CITIZENS BY BROAD FIELD, RACIAL/ETHNIC GROUP AND SEX
1975 – 1991

Year	Total*	Men*	Wom*	%W	Am. Ind.		Asian		Black		Hispanic		%	White	
					Men	Wom	Men	Wom	Men	Wom	Men	Wom	Min	Men	Wom
PHYSICAL SCIENCES**															
1975	2809	2606	203	7	0	0	37	2	28	3	18	1	3.2	2393	186
1976	2683	2466	217	8	0	0	44	11	17	6	13	1	3.4	2268	194
1977	2630	2413	217	8	6	0	43	4	29	3	35	4	4.7	2145	199
1978	2496	2264	232	9	4	0	57	7	34	5	19	2	5.1	1955	204
1979	2572	2308	264	10	3	0	48	8	32	4	23	7	4.9	2015	227
1980	2396	2110	286	12	4	1	51	10	12	2	18	5	4.3	1854	254
1981	2428	2157	271	11	1	0	44	6	19	3	28	4	4.3	1921	246
1982	2519	2163	356	14	3	0	44	24	18	5	19	8	4.8	2013	312
1983	2547	2181	366	14	8	0	54	20	18	2	20	13	5.3	2000	322
1984	2545	2146	399	16	4	0	63	22	27	3	31	8	6.2	1947	356
1985	2485	2074	411	17	4	0	60	24	20	5	24	6	5.8	1899	366
1986	2436	2026	410	17	4	3	60	21	16	4	31	9	6.1	1851	364
1987	2506	2061	445	18	5	2	60	16	13	5	36	15	6.1	1881	402
1988	2609	2131	478	18	6	2	57	17	23	7	48	17	6.8	1932	428
1989	2492	1980	512	21	14	2	71	15	20	8	41	17	7.5	1789	472
1990	2684	2144	540	20	3	1	70	20	14	8	48	26	7.1	1949	477
1991	2632	2089	543	21	10	3	66	22	21	5	53	11	7.3	1893	497
Total	**43469**	**37319**	**6150**	**14**	**79**	**14**	**929**	**249**	**361**	**78**	**505**	**154**	**7.5**	**33705**	**5506**
MATHEMATICS & COMPUTER SCIENCE															
1975	848	761	87	10	3	0	9	2	8	2	7	1	3.8	696	80
1976	748	663	85	11	0	0	12	3	5	0	9	0	3.9	601	81
1977	714	623	91	13	1	0	10	4	10	0	6	1	4.5	566	83
1978	704	606	98	14	0	1	10	7	10	2	5	0	5.0	536	85
1979	715	597	118	17	1	0	15	6	12	0	4	3	5.7	531	103
1980	676	584	92	14	0	0	13	1	6	5	4	0	4.3	525	82
1981	650	550	100	15	1	0	17	7	7	2	3	1	5.8	495	88
1982	601	512	89	15	2	0	11	2	5	2	6	1	4.8	472	81
1983	591	488	103	17	1	0	15	4	3	3	2	2	5.1	442	93
1984	585	486	99	17	3	0	19	2	3	2	13	1	7.4	429	92
1985	565	471	94	17	0	0	14	2	5	0	8	4	5.8	421	86
1986	568	462	106	19	0	1	24	2	2	3	10	3	7.9	405	97
1987	587	473	114	19	2	1	20	8	9	2	11	2	9.4	410	100
1988	626	528	98	16	3	0	32	5	3	0	5	0	7.7	468	93
1989	731	566	165	23	1	1	26	5	4	3	5	7	7.1	503	144
1990	723	561	162	22	1	0	17	4	4	1	7	4	5.3	520	151
1991	808	639	169	21	1	0	33	12	6	8	12	4	9.4	573	144
Total	11440	9570	1870	16	20	4	297	76	102	35	117	34	6.0	8593	1683

* Includes those whose race/ethnicity is not known.

** Includes Physics and Astronomy, Chemistry, and Earth, Atmospheric, and Marine Sciences

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 2-9 (continued)

Ph D AWARDS TO U.S. CITIZENS BY BROAD FIELD, RACIAL/ETHNIC GROUP AND SEX
1975 – 1991

Year	Total*	Men*	Wom*	%W	Am. Ind. Men	Am. Ind. Wom	Asian Men	Asian Wom	Black Men	Black Wom	Hispanic Men	Hispanic Wom	% Min	White Men	White Wom
SOCIAL SCIENCES															
1975	2629	2060	569	22	2	1	21	2	55	22	20	6	4.9	1836	519
1976	2638	2030	608	23	3	0	25	6	55	20	25	3	5.2	1801	556
1877	2408	1857	551	23	3	1	25	4	69	27	28	5	6.7	1634	490
1978	2299	1679	620	27	3	1	25	11	39	26	25	12	6.2	1471	535
1979	2420	1722	698	29	5	3	29	14	53	27	38	10	7.4	1463	606
1980	2375	1679	696	29	5	2	33	11	36	40	37	8	7.2	1469	609
1981	2294	1617	677	30	4	0	33	15	44	28	36	13	7.5	1402	595
1982	2163	1475	688	32	3	1	32	13	54	32	38	12	8.6	1290	612
1983	2199	1444	755	34	2	2	17	18	49	30	40	17	8.0	1274	669
1984	2036	1291	745	37	3	1	25	16	46	36	40	15	8.9	1134	659
1985	1982	1238	744	38	3	6	18	17	44	35	40	23	9.4	1082	642
1986	2013	1212	801	40	9	3	27	15	35	31	38	20	8.8	1065	713
1987	1856	1144	712	38	4	2	27	16	25	28	39	22	8.8	1018	627
1988	1862	1099	763	41	4	3	31	20	35	30	21	30	9.3	980	669
1989	1806	1059	747	41	5	2	21	11	35	43	26	22	9.1	946	661
1990	1746	1042	704	40	2	3	26	16	39	30	41	30	10.7	914	619
1991	1703	957	746	44	6	2	19	22	44	35	35	32	11.5	826	646
Total	**36429**	**24605**	**11824**	**32**	**66**	**33**	**434**	**227**	**757**	**520**	**567**	**280**	**7.9**	**21605**	**10427**
PSYCHOLOGY															
1975	2552	1746	806	32	4	1	5	8	51	25	27	3	4.9	1588	739
1976	2727	1832	895	33	4	0	11	6	49	37	22	5	4.9	1682	829
1877	2774	1767	1007	36	3	6	13	13	54	38	23	11	5.8	1605	908
1978	2804	1770	1034	37	2	1	8	9	50	46	29	15	5.7	1584	908
1979	2850	1700	1150	40	7	3	19	10	44	68	25	17	6.8	1522	1000
1980	2859	1637	1222	43	3	3	14	26	52	63	30	21	7.4	1461	1072
1981	3111	1746	1365	44	4	5	16	17	47	64	30	29	6.8	1597	1222
1982	2876	1556	1320	46	10	6	6	19	49	63	42	27	7.7	1424	1183
1983	3044	1576	1468	48	7	2	19	16	35	75	41	43	7.8	1434	1306
1984	2935	1440	1495	51	5	1	16	16	41	74	41	40	8.0	1302	1350
1985	2805	1396	1409	50	5	5	18	16	39	62	25	39	7.5	1284	1268
1986	2766	1330	1436	52	5	5	15	17	36	66	43	38	8.1	1215	1294
1987	2747	1259	1488	54	4	12	14	24	30	58	31	61	8.5	1159	1317
1988	2667	1190	1477	55	3	4	13	24	45	54	37	52	8.7	1078	1326
1989	2684	1146	1538	57	3	8	20	18	35	61	27	60	8.6	1049	1374
1990	2909	1191	1718	59	6	12	19	25	42	69	45	53	9.3	1056	1533
1991	2796	1044	1752	63	5	8	12	31	38	75	46	63	9.9	935	1568
Total	**47906**	**25326**	**22580**	**47**	**79**	**82**	**238**	**295**	**737**	**998**	**564**	**577**	**7.5**	**22975**	**20197**

* Includes those whose race/ethnicity is not known.

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 2-9 (continued)

Ph D AWARDS TO U.S. CITIZENS BY BROAD FIELD, RACIAL/ETHNIC GROUP AND SEX
1975 – 1991

Year	Total*	Men*	Wom*	%W	Am. Ind. Men	Am. Ind. Wom	Asian Men	Asian Wom	Black Men	Black Wom	Hispanic Men	Hispanic Wom	% Min	White Men	White Wom
	ENGINEERING														
1975	1716	1684	32	2	1	0	60	1	11	0	15	0	5.1	1522	31
1976	1557	1523	34	2	0	0	57	2	12	0	15	0	5.5	1389	31
1977	1472	1430	42	3	1	0	66	1	10	1	18	0	6.6	1266	38
1978	1261	1231	30	2	2	0	63	0	9	0	19	0	7.4	1047	27
1979	1293	1254	39	3	3	0	69	0	16	1	14	1	8.0	1052	33
1980	1255	1191	64	5	3	0	71	2	9	2	17	1	8.4	1015	53
1981	1170	1117	53	5	4	0	71	6	16	0	12	0	9.3	966	43
1982	1169	1095	74	6	3	0	69	3	9	0	22	1	9.2	946	69
1983	1163	1080	83	7	0	0	63	3	18	1	15	3	8.9	943	73
1984	1239	1151	88	7	3	0	79	16	11	1	18	4	10.7	997	65
1975	1279	1160	119	9	1	0	76	14	16	3	16	0	9.9	1000	97
1986	1383	1241	142	10	5	1	74	6	10	4	22	3	9.0	1104	125
1987	1557	1409	149	10	7	0	124	11	11	1	21	3	11.4	1198	132
1988	1780	1603	178	10	4	0	132	9	15	4	37	6	11.6	1375	155
1989	1864	1615	249	13	5	2	150	23	21	3	28	6	12.8	1371	212
1990	1953	1705	248	13	4	0	137	20	23	5	33	6	11.7	1470	216
1991	1977	1710	267	14	4	2	159	26	35	8	37	10	14.2	1443	216
Total	25088	23199	1891	8	50	5	1520	143	252	34	359	44	9.6	20104	1616
	HUMANITIES														
1975	4492	2975	1517	34	3	2	17	13	60	27	40	24	4.1	2679	1384
1976	4374	2873	1501	34	2	1	15	18	53	38	47	24	4.5	2581	1347
1977	4053	2572	1481	37	3	2	25	13	65	30	65	38	5.9	2280	1324
1978	3780	2349	1431	38	7	1	17	12	48	32	55	54	6.0	2066	1266
1979	3652	2244	1408	39	7	3	29	16	63	56	60	47	7.7	1952	1203
1980	3394	2023	1371	40	1	2	23	17	56	41	39	40	6.5	1813	1207
1981	3224	1886	1338	42	8	4	19	14	43	41	49	43	6.9	1679	1190
1982	3023	1705	1318	44	2	4	14	14	46	50	55	52	7.8	1534	1169
1983	2984	1656	1328	45	4	2	16	19	36	37	46	50	7.0	1503	1190
1984	2962	1607	1355	46	3	2	13	15	45	49	57	42	7.6	1438	1215
1985	2859	1608	1251	44	2	6	27	17	31	36	52	45	7.6	1454	1122
1986	2731	1478	1253	46	6	1	10	20	29	42	38	38	6.7	1366	1132
1987	2732	1472	1260	46	7	4	8	17	31	42	56	40	7.5	1337	1132
1988	2794	1533	1261	45	1	6	17	20	38	39	40	54	7.7	1404	1128
1989	2720	1461	1259	46	2	5	24	16	30	42	44	39	7.4	1324	1136
1990	3091	1666	1425	46	6	2	21	14	37	35	49	62	7.3	1521	1299
1991	3151	1671	1480	47	3	7	16	28	40	51	50	60	8.1	1525	1318
Total	56016	32779	23237	41	67	54	311	283	751	688	842	752	6.7	29456	20762

* Includes those whose race/ethnicity is not known.

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 2-9 (continued)

Ph D AWARDS TO U.S. CITIZENS BY BROAD FIELD, RACIAL/ETHNIC GROUP AND SEX
1975 – 1991

Year	Total*	Men*	Wom*	%W	Am. Ind. Men	Am. Ind. Wom	Asian Men	Asian Wom	Black Men	Black Wom	Hispanic Men	Hispanic Wom	% Min	White Men	White Wom
EDUCATION															
1975	6802	4654	2148	31.6	13	3	27	12	376	233	72	20	11.1	4029	1818
1976	7114	4756	2358	33.1	15	6	18	19	386	288	77	44	12.0	4129	1943
1977	6795	4385	2410	35.5	17	12	16	25	392	275	93	42	12.8	3741	1986
1978	6498	3850	2648	40.8	22	7	32	25	299	287	106	50	12.7	3212	2135
1979	6568	3738	2830	43.1	24	16	33	21	264	294	105	57	12.4	3143	2287
1980	6749	3641	3108	46.1	25	18	28	37	260	331	77	67	12.5	3126	2526
1981	6581	3341	3240	49.2	24	15	37	42	267	297	76	77	12.7	2834	2691
1982	6279	3092	3187	50.8	13	16	24	45	234	343	110	66	13.6	2666	2653
1983	6246	2944	3302	52.9	21	24	34	40	200	293	90	91	12.7	2549	2801
1984	5912	2761	3151	53.3	20	13	27	33	191	295	62	84	12.3	2412	2673
1985	5776	2632	3144	54.4	12	28	24	45	158	319	83	98	13.3	2321	2611
1986	5625	2418	3207	57.0	16	10	26	34	141	280	69	121	12.4	2127	2719
1987	5489	2358	3131	57.0	18	23	18	23	136	244	82	104	11.8	2070	2682
1988	5295	2234	3061	57.8	18	18	34	48	104	267	65	87	12.1	1986	2606
1989	5194	2108	3086	59.4	9	15	22	33	129	260	67	84	11.9	1860	2672
1990	5629	2269	3360	59.7	16	21	18	48	139	316	81	99	13.1	1997	2840
1991	5424	2169	3255	60.0	28	24	26	55	135	269	60	110	13.0	1903	2777
Total	**103976**	**53350**	**50626**	**48.7**	**311**	**269**	**444**	**585**	**3811**	**4891**	**1375**	**1301**	**12.5**	**46105**	**42420**
PROFESSIONAL AND OTHER FIELDS															
1975	1312	1091	221	17	0	1	13	3	24	18	9	1	5.3	1013	189
1976	1439	1130	309	21	4	2	8	2	35	23	19	7	6.9	1016	266
1977	1382	1068	314	23	2	0	12	2	25	24	20	3	6.4	960	264
1978	1404	1093	311	22	2	0	13	5	42	21	20	8	7.9	955	253
1979	1393	1023	370	27	3	1	7	7	40	24	11	2	6.8	897	317
1980	1344	952	392	29	0	1	18	6	36	27	12	3	7.7	836	342
1981	1300	884	416	32	2	1	10	7	28	39	9	11	8.2	783	342
1982	1389	912	477	34	1	1	18	5	36	37	13	5	8.4	828	423
1983	1344	899	445	33	1	0	19	9	25	37	11	11	8.4	818	375
1984	1436	903	533	37	4	0	19	4	28	29	21	13	8.2	803	470
1985	1361	855	506	37	4	2	15	8	33	42	12	17	9.8	778	428
1986	1409	848	561	40	4	5	22	9	26	37	17	7	9.0	768	497
1987	1463	876	587	40	5	3	12	5	29	30	15	10	7.5	802	533
1988	1422	873	548	39	4	2	20	9	27	53	13	6	9.4	796	474
1989	1482	871	611	41	4	3	23	9	24	30	15	10	8.0	794	555
1990	1539	858	681	44	6	4	20	11	18	44	17	14	8.7	787	601
1991	1591	918	673	42	3	3	23	16	28	50	12	16	9.5	841	580
Total	**24010**	**16054**	**7955**	**33**	**49**	**29**	**272**	**117**	**504**	**565**	**246**	**144**	**8.0**	**14475**	**6909**

* Includes those whose race/ethnicity is not known.

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 2-9 (continued)

Ph D AWARDS TO U.S. CITIZENS BY BROAD FIELD, RACIAL/ETHNIC GROUP AND SEX
1975 – 1991

Year	Total*	Men*	Wom*	%W	Am. Ind. Men	Am. Ind. Wom	Asian Men	Asian Wom	Black Men	Black Wom	Hispanic Men	Hispanic Wom	% Min	White Men	White Wom
TOTAL SCIENCE AND ENGINEERING															
1975	14025	11633	2392	17	11	3	165	36	190	71	121	16	4.4	10915	2325
1976	13688	11185	2503	18	10	0	203	51	178	94	110	12	4.8	10645	2446
1977	13277	10557	2720	20	17	8	203	50	202	97	131	30	5.6	9583	2468
1978	13086	10294	2792	21	18	3	217	58	175	103	120	40	5.6	9048	2436
1979	13524	10395	3129	23	22	6	238	68	177	121	130	50	6.0	9110	2725
1980	13355	10017	3338	25	19	8	239	86	146	130	126	45	6.0	8850	2939
1981	13544	10046	3498	26	20	6	246	84	157	125	140	58	6.2	8980	3110
1982	13292	9652	3640	27	27	11	223	104	159	126	160	66	6.6	8777	3257
1983	13403	9457	3946	29	22	5	235	110	150	133	140	97	6.7	8592	3524
1984	13250	9287	3963	30	26	5	269	115	156	143	173	81	7.3	8368	3553
1985	12948	9018	3930	30	21	20	260	113	152	126	148	96	7.2	8163	3497
1986	12869	8783	4086	32	33	19	282	115	124	130	177	99	7.6	7955	3661
1987	12819	8718	4102	32	31	21	320	123	115	119	179	126	8.1	7829	3653
1988	13214	8931	4284	32	28	13	334	116	143	117	199	128	8.2	8018	3857
1989	13301	8744	4557	34	33	19	365	122	142	142	180	130	8.5	7819	4095
1990	13466	8772	4694	35	33	24	369	134	153	137	213	131	8.9	7794	4212
1991	13780	8899	4881	35	36	19	384	181	169	156	233	156	9.7	7911	4324
Total	226841	164388	62455	28	407	190	4552	1666	2688	2070	2680	1361	6.9	148357	56082
NATURAL SCIENCE AND ENGINEERING															
1975	8844	7827	1017	11.5	5	1	139	26	84	24	74	7	4.07	7491	1067
1976	8323	7323	1000	12.0	3	0	167	39	74	37	63	4	4.65	7162	1061
1977	8095	6933	1162	14.4	11	1	165	33	79	32	80	14	5.13	6344	1070
1978	7983	6845	1138	14.3	13	1	184	38	86	31	66	13	5.41	5993	993
1979	8254	6973	1281	15.5	10	0	190	44	80	26	67	23	5.33	6125	1119
1980	8121	6701	1420	17.5	11	3	192	49	58	27	59	16	5.11	5920	1258
1981	8139	6683	1456	17.9	12	1	197	52	66	33	74	16	5.54	5981	1293
1982	8253	6621	1632	19.8	14	4	185	72	56	31	80	27	5.68	6063	1462
1983	8160	6437	1723	21.1	13	1	199	76	66	28	59	37	5.87	5884	1549
1984	8279	6556	1723	20.8	18	3	228	83	69	33	92	26	6.67	5932	1544
1985	8161	6384	1777	21.8	13	9	224	80	69	29	83	34	6.63	5797	1587
1986	8090	6241	1849	22.9	20	11	240	83	53	33	96	41	7.13	5675	1654
1987	8216	6315	1902	23.1	23	7	279	83	60	33	109	43	7.75	5652	1709
1988	8685	6642	2044	23.5	21	6	290	72	63	33	141	46	7.74	5960	1862
1989	8811	6539	2272	25.8	25	9	324	93	72	38	127	48	8.35	5824	2060
1990	9249	6903	2346	25.4	15	2	310	86	68	35	143	67	7.85	6205	2134
1991	9281	6898	2383	25.7	25	9	353	128	87	46	152	61	9.28	6150	2110
Total	142944	114821	28125	19.7	252	68	3866	1137	1190	549	1565	523	6.40	104158	25532

* Includes those whose race/ethnicity is not known.

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 2-10

SCIENCE AND ENGINEERING DOCTORATE RECIPIENTS BY FIELD AND SEX: 1979 – 1991

Year	Total S/E		All Sciences		Physical Sciences		Math		Computer Sciences		Earth, Atmos & Ocean Sci		Ag & Bio Sciences		Psychology		Social Sciences		Engineering	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
	TOTAL																			
1979	17,589	100	15,095	85.8	2,674	15.2	769	4.4	210	1.2	642	3.7	4,501	25.6	3,091	17.6	3,208	18.2	2,494	14.2
1980	17,523	100	15,095	85.9	2,521	14.4	744	4.2	218	1.2	628	3.6	4,715	26.9	3,098	17.7	3,120	17.8	2,479	14.1
1981	17,996	100	15,095	86.0	2,627	14.6	728	4.0	232	1.3	583	3.2	4,786	26.6	3,358	18.7	3,154	17.5	2,528	14.0
1982	18,017	100	15,095	85.3	2,694	15.0	720	4.0	220	1.2	657	3.6	4,844	26.9	3,159	17.5	3,077	17.1	2,646	14.7
1983	18,393	100	15,095	84.9	2,802	15.2	701	3.8	286	1.6	637	3.5	4,756	25.9	3,347	18.2	3,083	16.8	2,781	15.1
1984	18,514	100	15,095	84.3	2,845	15.4	698	3.8	295	1.6	614	3.3	4,877	26.3	3,257	17.6	3,015	16.3	2,913	15.7
1985	18,712	100	15,095	83.1	2,916	15.6	688	3.7	310	1.7	617	3.3	4,904	26.2	3,117	16.7	2,994	16.0	3,166	16.9
1986	19,251	100	15,095	82.5	3,090	16.1	729	3.8	399	2.1	589	3.1	4,805	25.0	3,124	16.2	3,139	16.3	3,376	17.5
1987	19,707	100	15,095	81.2	3,212	16.3	740	3.8	450	2.3	626	3.2	4,816	24.4	3,169	16.1	2,980	15.1	3,712	18.8
1988	20,741	100	15,095	79.8	3,317	16.0	749	3.6	515	2.5	728	3.5	5,127	24.7	3,064	14.8	3,051	14.7	4,190	20.2
1989	21,530	100	15,095	78.9	3,244	15.1	859	4.0	612	2.8	740	3.4	5,203	24.2	3,203	14.9	3,125	14.5	4,544	21.1
1990	22,773	100	17,781	78.1	3,494	15.3	892	3.9	704	3.1	769	3.4	5,509	24.2	3,267	14.3	3,146	13.8	4,992	21.9
1991	23,041	100	18,281	79.3	3,601	15.6	1,040	4.5	797	3.5	837	3.6	5,879	25.5	3,240	14.1	2,887	12.5	4,760	20.7
	MEN																			
1979	13,913	100	11,481	82.5	2,382	17.1	650	4.7	183	1.3	584	4.2	3,470	24.9	1,831	13.2	2,381	17.1	2,432	17.5
1980	13,636	100	11,250	82.5	2,199	16.1	649	4.8	197	1.4	564	4.1	3,565	26.1	1,787	13.1	2,289	16.8	2,389	17.5
1981	13,880	100	11,451	82.5	2,318	16.7	616	4.4	206	1.5	527	3.8	3,563	25.7	1,885	13.6	2,334	16.8	2,429	17.5
1982	13,747	100	11,225	81.7	2,337	17.0	624	4.5	200	1.5	554	4.0	3,552	25.8	1,721	12.5	2,237	16.3	2,522	18.3
1983	13,769	100	11,112	80.7	2,431	17.7	588	4.3	250	1.8	540	3.9	3,390	24.6	1,750	12.7	2,163	15.7	2,657	19.3
1984	13,810	100	11,048	80.0	2,446	17.7	583	4.2	258	1.9	508	3.7	3,529	25.6	1,626	11.8	2,098	15.2	2,762	20.0
1985	13,900	100	10,932	78.6	2,452	17.6	582	4.2	277	2.0	506	3.6	3,495	25.1	1,576	11.3	2,044	14.7	2,968	21.4
1986	14,167	100	11,016	77.8	2,585	18.2	608	4.3	351	2.5	489	3.5	3,353	23.7	1,526	10.8	2,104	14.9	3,151	22.2
1987	14,472	100	11,002	76.0	2,686	18.6	615	4.3	385	2.7	514	3.6	3,284	22.7	1,474	10.2	2,044	14.1	3,470	24.0
1988	15,164	100	11,260	74.3	2,760	18.2	628	4.1	459	3.0	583	3.8	3,436	22.6	1,388	9.2	2,006	13.2	3,904	25.7
1989	15,522	100	11,353	73.1	2,627	16.9	704	4.5	504	3.2	590	3.8	3,433	22.1	1,406	9.1	2,089	13.5	4,169	26.9
1990	16,399	100	11,921	72.7	2,843	17.3	734	4.5	594	3.6	620	3.8	3,657	22.3	1,361	8.3	2,112	12.9	4,478	27.3
1991	16,405	100	12,097	73.7	2,942	17.9	846	5.2	681	4.2	652	4.0	3,875	23.6	1,256	7.7	1,845	11.2	4,308	26.3
	WOMEN																			
1979	3,676	20.9	3,614	23.9	292	10.9	119	15.5	27	12.9	58	9.0	1,031	22.9	1,260	40.8	827	25.8	62	2.5
1980	3,884	22.2	3,794	25.2	322	12.8	95	12.8	21	9.6	64	10.2	1,150	24.4	1,311	42.3	831	26.6	90	3.6
1981	4,116	22.9	4,017	26.0	309	11.8	112	15.4	26	11.2	56	9.6	1,221	25.5	1,473	43.9	820	26.0	99	3.9
1982	4,270	23.7	4,146	27.0	357	13.3	96	13.3	20	9.1	103	15.7	1,292	26.7	1,438	45.5	840	27.3	124	4.7
1983	4,624	25.1	4,500	28.8	371	13.2	113	16.1	36	12.6	97	15.2	1,366	28.7	1,597	47.7	920	29.8	124	4.5
1984	4,704	25.4	4,553	29.2	399	14.0	115	16.5	37	12.5	106	17.3	1,348	27.6	1,631	50.1	917	30.4	151	5.2
1985	4,812	25.7	4,614	29.7	464	15.9	106	15.4	33	10.6	111	18.0	1,409	28.7	1,541	49.4	950	31.7	198	6.3
1986	5,084	26.4	4,859	30.6	505	16.3	121	16.6	48	12.0	100	17.0	1,452	30.2	1,598	51.2	1,035	33.0	225	6.7
1987	5,234	26.6	4,992	31.2	526	16.4	125	16.9	65	14.4	114	18.2	1,532	31.8	1,695	53.5	936	31.4	242	6.5
1988	5,576	26.9	5,290	32.0	557	16.8	121	16.2	56	10.9	145	19.9	1,691	33.0	1,676	54.7	1,045	34.3	286	6.8
1989	6,006	27.9	5,633	37.3	617	19.0	155	18.0	108	17.6	150	20.3	1,770	34.0	1,797	56.1	1,036	33.2	373	8.2
1990	6,233	27.4	5,860	33.0	651	18.6	158	17.7	110	15.6	149	19.4	1,852	33.6	1,906	58.3	1,034	32.9	373	7.5
1991	6,636	28.8	6,184	33.8	659	18.3	194	18.7	116	14.6	185	22.1	2,004	34.1	1,984	61.2	1,042	36.1	452	9.5

Note: Percentages for TOTAL and MEN are of Total All Fields. Percentages for WOMEN are of total in a field.

SOURCE: Selected Data on Science and Engineering Doctorate Awards; 1990, National Science Foundation, NSF 91-310

TABLE 2-11
FOREIGN CITIZENS ON TEMPORARY VISAS EARNING PhDs IN THE U.S. BY FIELD, SEX AND RACE/ETHNICITY: 1979 – 1991

Year	Total All Fields		All Sciences		Physical Sciences		Math		Computer Sciences		Earth, Atmos & Ocean Sci		Agri & Bio Sci		Psychology		Social Sciences		Engineering	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
TOTAL																				
1979	3,587	100	1,842	51.4	415	15.9	149	4.2	32	0.9	71	2.0	562	15.7	73	2.0	540	15.1	815	22.7
1980	3,644	100	1,859	51.0	426	16.1	139	3.8	43	1.2	80	2.2	592	16.2	71	1.9	508	13.9	851	23.4
1981	3,940	100	2,020	51.3	442	15.3	186	4.7	40	1.0	85	2.2	613	15.6	80	2.0	574	14.6	942	23.9
1982	4,204	100	2,097	49.9	506	16.6	192	4.6	59	1.4	81	1.9	603	14.3	65	1.5	591	14.1	1,030	24.5
1983	4,499	100	2,230	49.6	539	16.2	209	4.6	72	1.6	106	2.4	629	14.0	79	1.8	596	13.2	1,170	26.0
1984	4,832	100	2,423	50.1	564	15.6	232	4.8	89	1.8	106	2.2	675	14.0	88	1.8	669	13.8	1,269	26.3
1985	5,229	100	2,609	49.9	620	15.7	238	4.6	89	1.7	119	2.3	779	14.9	81	1.5	683	13.1	1,419	27.1
1986	5,276	100	2,769	52.5	758	18.7	272	5.2	123	2.3	106	2.0	711	13.5	81	1.5	718	13.6	1,372	26.0
1987	5,610	100	2,918	52.0	798	18.3	302	5.4	143	2.5	125	2.2	781	13.9	85	1.5	684	12.2	1,532	27.3
1988	6,192	100	3,197	51.6	865	14.0	305	4.9	176	2.8	137	2.2	902	14.6	84	1.4	729	11.8	1,722	27.8
1989	6,648	100	3,437	51.7	888	13.4	346	5.2	178	2.7	124	1.9	964	14.5	106	1.6	831	12.5	1,941	29.2
1990	7,744	100	4,095	52.9	1,021	13.2	413	5.3	263	3.4	171	2.2	1,245	16.1	116	1.5	866	11.2	2,191	28.3
1991	8,852	100	4,694	53.0	1,205	13.6	480	5.4	338	3.8	188	2.1	1,522	17.2	121	1.4	840	9.5	2,473	27.9
MEN																				
1979	3,092	100	1,536	49.7	375	16.1	130	5.6	32	1.4	66	2.8	472	20.2	43	1.8	466	15.1	798	34.2
1980	3,154	100	1,558	49.4	380	15.9	130	5.4	42	1.8	76	3.2	508	21.2	48	2.0	430	13.6	836	34.9
1981	3,387	100	1,661	49.0	392	15.2	162	6.3	38	1.5	78	3.0	512	19.9	48	1.9	497	14.7	913	35.5
1982	3,621	100	1,743	48.1	442	16.1	179	6.5	56	2.0	76	2.8	503	18.3	42	1.5	511	14.1	999	36.4
1983	3,872	100	1,851	47.8	480	16.0	185	6.2	66	2.2	99	3.3	520	17.4	48	1.6	516	13.3	1,144	38.2
1984	4,134	100	1,975	47.8	501	15.7	207	6.5	81	2.5	97	3.0	550	17.2	53	1.7	561	13.6	1,226	38.3
1985	4,395	100	2,103	47.8	525	15.1	216	6.2	81	2.3	106	3.1	608	17.5	53	1.5	575	13.1	1,363	39.3
1986	4,414	100	2,207	50.0	644	18.2	234	6.6	119	3.4	93	2.6	558	15.8	47	1.3	586	13.3	1,323	37.5
1987	4,722	100	2,337	49.5	703	18.4	260	6.8	138	3.6	112	2.9	581	15.2	48	1.3	568	12.0	1,478	38.7
1988	5,134	100	2,590	50.4	738	14.4	262	5.1	168	3.3	124	2.4	680	13.2	48	0.9	570	11.1	1,652	32.2
1989	5,444	100	2,747	50.5	742	13.6	299	5.5	160	2.9	110	2.0	700	12.9	60	1.1	676	12.4	1,851	34.0
1990	6,336	100	3,265	51.5	849	13.4	354	5.6	249	3.9	152	2.4	902	14.2	61	1.0	698	11.0	2,074	32.7
WOMEN																				
1979	495	13.8	253	13.7	40	9.6	19	12.8	0	0.0	5	7.0	90	16.0	30	41.1	74	13.7	17	2.1
1980	490	13.4	234	12.6	46	10.8	9	6.5	1	2.3	4	5.0	84	14.2	23	32.4	78	15.4	15	1.8
1981	553	14.0	289	14.3	50	11.3	24	12.9	2	5.0	7	8.2	101	16.5	32	40.0	77	13.4	29	3.1
1982	583	13.9	278	13.3	64	12.6	13	6.8	3	5.1	5	6.2	100	16.6	23	35.4	80	13.5	31	3.0
1983	627	13.9	307	13.8	59	10.9	24	11.5	6	8.3	7	6.6	109	17.3	31	39.2	80	13.4	26	2.2
1984	698	14.4	365	15.1	63	11.2	25	10.8	8	9.0	9	8.5	125	18.5	35	39.8	105	15.7	43	3.4
1985	834	15.9	438	16.8	95	15.3	22	9.2	8	9.0	13	10.9	171	22.0	28	34.6	108	15.8	56	3.9
1986	862	16.3	477	17.2	114	15.0	38	14.0	4	3.3	13	12.3	153	21.5	34	42.0	132	18.4	49	3.6
1987	888	15.8	495	17.0	95	11.9	42	13.9	5	3.5	13	10.4	200	25.5	37	43.5	116	17.0	54	3.5
1988	1,061	17.1	606	19.0	127	14.7	43	14.1	8	4.5	13	9.5	222	24.6	36	42.9	159	21.8	70	4.1
1989	1,204	18.1	690	20.1	146	16.4	47	13.6	18	10.1	14	11.3	264	27.4	46	43.4	155	18.7	90	4.6
1990	1,408	15.9	830	17.7	172	14.3	59	12.3	14	4.1	19	10.1	343	22.5	55	45.5	168	20.0	117	4.7
WHITE																				
1979	1,26?	14.3	576	32.2	113	27.2	66	44.3	15	46.9	26	36.6	141	25.1	37	50.7	190	22.6	275	33.7
1980	1,331	15.0	606	33.9	115	27.0	58	41.7	23	53.5	31	38.8	182	30.7	50	70.4	175	20.8	264	33.4
1981	1,432	16.2	662	33.9	101	22.9	71	38.2	23	57.5	43	50.6	171	27.9	48	60.0	233	27.7	304	32.3
1982	1,458	16.5	670	33.2	132	26.1	84	43.8	26	44.1	31	38.3	185	30.7	42	64.6	186	22.1	328	31.8
1983	1,539	17.4	732	33.9	160	29.7	90	43.1	33	45.8	34	32.1	191	30.4	43	54.4	202	24.0	375	32.1
1984	1,495	16.9	702	30.0	125	22.2	88	37.9	30	33.7	39	36.8	189	28.0	49	55.7	206	24.5	347	27.3
1985	1,587	17.7	757	29.8	153	24.7	97	40.8	31	34.8	45	37.8	210	27.0	47	58.0	195	23.2	361	25.4
1986	1,506	17.0	772	26.8	170	22.4	101	37.1	39	31.7	42	39.6	188	26.4	42	51.9	209	24.9	348	25.4
1987	1,564	17.7	765	27.0	186	23.3	102	33.8	40	28.0	40	32.0	191	24.4	51	60.0	186	22.1	375	24.5
1988	1,682	19.0	856	18.2	183	15.2	107	22.3	44	13.0	41	21.8	220	14.5	37	30.6	224	26.7	411	16.6
1989	1,754	19.8	889	18.9	171	14.2	121	25.2	42	12.4	44	23.4	234	15.4	56	46.3	221	26.3	491	19.9
1990	1,878	21.2	907	19.3	163	13.5	119	24.8	55	16.3	51	27.1	256	16.8	52	43.0	211	25.1	536	21.8

TABLE 2-11 (continued)

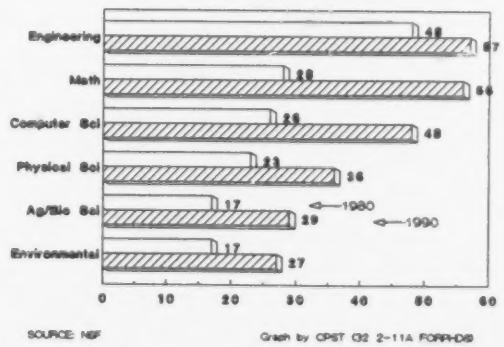
FOREIGN CITIZENS ON TEMPORARY VISAS EARNING PhDs IN THE U.S. BY FIELD, SEX AND RACE/ETHNICITY: 1979 – 1990

Year	Total All Fields		All Sciences		Physical Sciences		Math		Computer Sciences		Earth, Atmos & Marine Sci		Life Sciences		Psychology		Social Sciences		Engineering	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
BLACK																				
1979	320	4.1	127	7.1	14	3.4	1	0.7	1	3.1	3	4.2	53	9.4	5	6.8	59	6.8	34	4.2
1980	331	4.3	139	7.8	14	3.3	2	1.4	0	0.0	4	5.0	68	11.5	2	2.8	57	6.6	39	4.6
1981	372	4.8	164	8.4	12	2.7	9	4.8	1	2.5	8	9.4	79	12.9	3	3.8	62	7.2	39	4.1
1982	373	4.8	161	8.0	18	3.6	6	3.1	0	0.0	7	8.6	65	10.8	5	7.7	73	8.4	33	3.2
1983	363	4.7	162	7.5	16	3.0	2	1.0	1	1.4	11	10.4	61	9.7	1	1.3	81	9.4	38	3.2
1984	419	5.4	169	7.2	22	3.9	4	1.7	3	3.4	6	5.7	72	10.7	1	1.1	76	8.8	51	4.0
1985	395	5.1	169	6.7	19	3.1	4	1.7	0	0.0	2	1.7	73	9.4	3	3.7	82	9.5	38	2.7
1986	313	4.0	153	5.7	19	2.5	6	2.2	3	2.4	3	2.8	65	9.1	3	3.7	71	8.2	25	1.8
1987	305	3.9	134	4.7	17	2.1	7	2.3	1	0.7	1	0.8	45	5.8	4	4.7	74	8.5	31	2.0
1988	291	3.8	154	3.8	17	1.7	4	1.0	2	0.8	4	2.3	63	5.1	6	5.2	58	6.7	36	1.6
1989	273	3.5	147	3.6	13	1.3	5	1.2	3	1.1	3	1.8	57	4.6	4	3.4	62	7.2	23	1.0
1990	277	3.6	155	3.8	6	0.6	9	2.2	1	0.4	3	1.8	63	5.1	6	5.2	67	7.7	33	1.5
ASIAN																				
1979	1,463	40.8	778	43.4	239	57.6	58	38.9	12	37.5	26	36.6	238	42.3	14	19.2	212	39.3	408	50.1
1980	1,472	40.4	742	41.4	255	59.9	65	46.8	14	32.6	26	32.5	209	35.3	9	12.7	190	37.4	448	52.6
1981	1,564	39.7	792	40.6	276	62.4	81	43.5	12	30.0	21	24.7	221	36.1	15	18.8	189	32.9	493	52.3
1982	1,829	43.5	906	44.8	310	61.3	76	39.6	30	50.8	34	42.0	238	39.5	9	13.8	243	41.1	565	54.9
1983	2,006	44.6	968	44.9	306	56.8	88	42.1	31	43.1	44	41.5	256	40.7	28	35.4	246	41.3	628	53.7
1984	2,295	47.5	1,117	47.7	356	63.1	107	46.1	51	57.3	45	42.5	287	42.5	24	27.3	277	41.4	749	59.0
1985	2,526	48.3	1,224	48.2	369	59.5	107	45.0	49	55.1	57	47.9	343	44.0	19	23.5	301	44.1	851	60.0
1986	2,645	50.1	1,323	49.3	476	62.8	125	46.0	68	55.3	50	47.2	318	44.7	20	24.7	296	41.2	838	61.1
1987	2,933	52.3	1,461	51.6	505	63.3	131	43.4	86	60.1	57	45.6	378	48.5	15	17.6	321	46.9	958	62.5
1988	3,517	56.8	1,763	55.1	591	68.3	150	49.2	114	64.8	70	51.1	454	50.3	27	32.1	357	49.0	1,125	65.3
1989	3,905	58.7	1,980	57.6	641	72.2	187	54.0	120	67.4	57	46.0	501	52.0	35	33.0	439	52.8	1,265	65.2
1990	4,788	61.8	2,587	63.2	772	75.6	248	60.0	190	72.2	101	59.1	744	59.8	48	41.4	484	55.9	1,447	66.0
HISPANIC																				
1979	348	9.7	207	11.6	22	5.3	19	12.8	3	9.4	10	14.1	102	18.1	9	12.3	47	8.7	61	7.5
1980	328	9.0	209	11.7	21	4.9	11	7.9	3	7.0	16	20.0	104	17.6	6	8.5	50	9.8	49	5.8
1981	389	9.9	239	12.3	30	6.8	19	10.2	2	5.0	6	7.1	117	19.1	7	8.8	62	10.8	76	8.1
1982	294	7.0	170	8.4	24	4.7	17	8.9	3	5.1	8	9.9	82	13.6	3	4.6	37	6.3	52	5.0
1983	342	7.6	182	8.4	34	6.3	19	9.1	6	8.3	11	10.4	80	12.7	7	8.9	28	4.7	71	6.1
1984	300	6.2	196	8.4	35	6.2	27	11.6	2	2.2	11	10.4	67	9.9	12	13.6	48	7.2	46	3.6
1985	361	6.9	219	8.6	45	7.3	19	8.0	2	2.2	8	6.7	101	13.0	4	4.9	41	6.0	64	4.5
1986	372	7.1	224	8.3	48	6.3	26	9.6	5	4.1	2	1.9	78	11.0	11	13.6	60	8.4	60	4.4
1987	338	6.0	223	7.9	39	4.9	23	7.6	6	4.2	17	13.6	97	12.4	9	10.6	35	5.1	63	4.1
1988	349	5.6	231	7.2	34	3.9	24	7.9	5	2.8	12	8.8	109	12.1	5	6.0	42	5.8	61	3.5
1989	364	5.5	241	7.0	28	3.2	19	5.5	6	3.4	14	11.3	111	11.5	9	8.5	54	6.5	70	3.6
1990	373	4.8	219	5.3	32	3.1	18	4.4	8	3.0	8	4.7	103	8.3	8	6.9	42	4.8	71	3.2

Note: Percentages for TOTAL and MEN are of Total All Fields. Percentages for all others are of total in a field.

CHART 2-4

FOREIGN CITIZENS AS A PERCENT OF PhD RECIPIENTS, 1980 AND 1990



SOURCE: NSF

Graph by CPST Ch2 2-11A FORPHDS

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 2-12

CITIZENSHIP AND VISA TYPE OF ASIAN PHD RECIPIENTS, 1977 – 1991

	TOTAL				MEN				WOMEN			
		Type of Visa				Type of Visa				Type of Visa		
YEAR	TOTAL	U.S.	Perm.	Temp.	Total	U.S.	Perm	Temp.	Total	U.S.	Perm.	Temp
1977	2,028	339	571	1,118	1,694	251	488	955	334	88	83	163
1978	2,343	390	642	1,311	1,932	287	531	1,114	411	103	111	197
1979	2,565	428	674	1,463	2,128	311	564	1,253	437	117	110	210
1980	2,574	458	644	1,472	2,108	313	513	1,282	466	145	131	190
1981	2,637	465	608	1,564	2,155	315	499	1,341	482	150	109	223
1982	2,833	452	552	1,829	2,292	281	444	1,567	541	171	108	262
1983	3,049	492	551	2,006	2,474	312	431	1,731	575	180	120	275
1984	3,314	512	507	2,295	2,709	338	389	1,982	605	174	118	313
1985	3,595	516	553	2,526	2,903	329	437	2,137	692	187	116	389
1986	3,703	530	528	2,645	3,022	347	417	2,258	681	183	111	387
1987	4,097	539	625	2,933	3,329	369	455	2,505	771	173	170	428
1988	4,753	613	622	3,517	3,827	414	457	2,956	926	200	165	561
1989	5,165	625	635	3,905	4,143	441	459	3,243	1,020	184	174	662
1990	6,048	617	643	4,788	4,828	411	466	3,951	1,220	206	177	837
1991	7,271	762	729	5,739	5,685	469	479	4,704	1,578	293	250	1,035

Percentages

	TOTAL				MEN				WOMEN			
		Type of Visa				Type of Visa				Type of Visa		
YEAR	TOTAL	U.S.	Perm.	Temp.	Total	U.S.	Perm	Temp.	Total	U.S.	Perm.	Temp
1977	100.0	16.7	28.2	55.1	83.5	14.8	28.8	56.4	16.5	26.3	24.9	48.8
1978	100.0	16.6	27.4	56.0	82.5	14.9	27.5	57.7	17.5	25.1	27.0	47.9
1979	100.0	16.7	26.3	57.0	83.0	14.6	26.5	58.9	17.0	26.8	25.2	48.1
1980	100.0	17.8	25.0	57.2	81.9	14.8	24.3	60.8	18.1	31.1	28.1	40.8
1981	100.0	17.6	23.1	59.3	81.7	14.6	23.2	62.2	18.3	31.1	22.6	46.3
1982	100.0	16.0	19.5	64.6	80.9	12.3	19.4	68.4	19.1	31.6	20.0	48.4
1983	100.0	16.1	18.1	65.8	81.1	12.6	17.4	70.0	18.9	31.3	20.9	47.8
1984	100.0	15.4	15.3	69.3	81.7	12.5	14.4	73.2	18.3	28.8	19.5	51.7
1985	100.0	14.4	15.4	70.3	80.8	11.3	15.1	73.6	19.2	27.0	16.8	56.2
1986	100.0	14.3	14.3	71.4	81.6	11.5	13.8	74.7	18.4	26.9	16.3	56.8
1987	100.0	13.2	15.3	71.6	81.3	11.1	13.7	75.2	18.8	22.4	22.0	55.5
1988	100.0	12.9	13.1	74.0	80.5	10.8	11.9	77.2	19.5	21.6	17.8	60.6
1989	100.0	12.1	12.3	75.6	80.2	10.6	11.1	78.3	19.7	18.0	17.1	64.9
1990	100.0	10.2	10.6	79.2	79.8	8.5	9.7	81.8	20.2	16.9	14.5	68.6
1991	100.0	10.5	10.0	78.9	78.2	8.2	8.4	82.7	21.7	18.6	15.8	65.6

Note: Total percentages are of the grand TOTAL. Subset percentages are of the subset Total.

SOURCE: Selected Data on Science and Engineering Doctorate Awards; 1990, National Science Foundation, NSF 91-310

TABLE 2-13

ASIAN DOCTORATES BY BROAD FIELD OF STUDY, 1975 – 1990

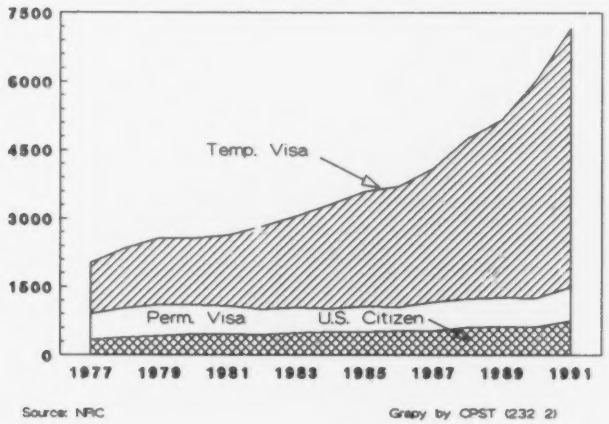
(U.S. Citizens and Non-U.S. Permanent Visa-Holders)

	Field of Doctorate													
Year	All Fields	Total S/E	% S/E	Eng	All Sci	Phys Sci	Earth, Atmos & Mar	Math	Comp Info Sci	Agri. Sci	Bio. Sci	Psych-ology	Soc Sci	Non-S/E
1975	1,025	807	78.7	274	533	171	19	62		46	141	21	73	218
1976	975	787	80.7	279	508	181	21	49		20	147	22	68	188
1977	910	738	81.1	249	489	160	21	42	0	21	140	33	72	172
1978	1,032	826	80.0	272	554	179	25	43	4	37	151	28	87	206
1979	1,102	865	78.5	306	559	168	21	46	9	23	165	36	91	237
1980	1,102	856	77.7	278	578	164	22	42	9	28	170	50	93	246
1981	1,073	814	75.9	285	529	149	14	40	16	25	156	41	88	259
1982	1,004	751	74.8	246	505	131	27	32	12	23	159	31	90	253
1983	1,043	771	73.9	247	524	136	26	34	20	33	164	44	67	272
1984	1,019	762	74.8	250	512	144	19	30	20	20	158	43	78	257
1985	1,069	799	74.7	281	518	150	21	33	17	24	151	44	78	270
1986	1,055	793	75.2	262	531	146	14	28	37	22	166	40	78	262
1987	1,167	921	78.9	327	594	143	18	41	26	38	170	47	111	246
1988	1,236	913	73.9	333	580	137	15	33	44	30	171	47	103	323
1989	1,260	979	77.7	360	619	155	23	24	52	23	199	55	88	281
1990	1,260	968	76.8	345	623	161	17	25	46	30	193	51	100	292
Totals	17,332	13,350	77.0	4,594	8,756	2,475	323	604	312	443	2,601	633	1,365	3,982

Note: 'Computer Sciences' introduced in 1977, 'Information Sciences' added in 1983.

CHART 2-5

CITIZENSHIP OF ASIAN PhD RECIPIENTS
1977 - 1991



Source: NRC

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Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 2-14

BLACK DOCTORATES BY BROAD FIELD OF STUDY, 1975 – 1991

(U.S. Citizens and Non–U.S. Permanent Visa–Holders)

Year	Field of Doctorate													
	All Fields	Total S/E	% S/E	Eng	All Sci	Phys Sci	Earth, Atmos & Mar	Math	Comp Info Sci	Agri. Sci	Bio. Sci	Psych–ology	Soc Sci	Non–S/E
1975	1,057	270	25.5	16	254	34	1	11	–	5	49	78	76	787
1976	1,149	277	24.1	21	256	25	0	5	–	8	53	86	79	872
1977	1,194	303	25.4	15	288	32	2	10	0	15	36	95	98	891
1978	1,106	309	27.9	13	296	37	4	13	0	11	55	100	76	797
1979	1,114	309	27.7	20	289	37	3	11	1	9	35	115	78	805
1980	1,106	319	28.8	18	287	16	1	12	0	7	51	119	81	801
1981	1,110	332	29.9	19	297	24	4	9	2	11	50	113	84	794
1982	1,143	336	29.4	20	293	26	3	6	1	7	49	115	86	830
1983	1,005	322	32.0	29	276	25	1	3	3	12	46	112	74	700
1984	1,055	357	33.8	15	321	34	3	4	3	18	50	121	88	719
1985	1,043	367	35.2	34	297	27	4	7	3	16	53	105	82	712
1986	949	298	31.4	24	274	25	1	6	1	16	48	108	69	650
1987	907	308	34.0	25	264	20	2	11	2	13	60	93	82	598
1988	966	346	35.8	31	315	33	3	4	2	20	48	103	102	613
1989	962	352	36.6	32	307	31	4	8	1	14	52	95	102	607
1990	972	340	35.0	40	300	27	2	4	1	15	41	110	100	632
1991	1,082	410	37.9	50	360	31	3	11	8	19	57	116	115	672
Totals	17,920	5,555	31.0	422	4,974	484	41	135	28	216	833	1,784	1,472	12,480

Note: 'Computer Sciences' introduced in 1977, 'Information Sciences' added in 1983.

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 2-15

HISPANIC DOCTORATES BY BROAD FIELD OF STUDY, 1975 – 1991

(U.S. Citizens and Non–U.S. Permanent Visa–Holders)

Year	Field of Doctorate													
	All Fields	Total S/E	% S/E	Eng	All Sci	Phys Sci	Earth, Atmos & Mar	Math	Comp Info Sci	Agri. Sci	Bio. Sci	Psych–ology	Soc Sci	Non–S/E
1975	337	143	42.4	17	126	19	4	8	–	4	32	32	27	194
1976	363	126	34.7	16	110	17	0	9	–	4	25	27	28	237
1977	474	186	39.2	22	164	33	12	10	0	4	25	40	40	288
1978	538	199	37.0	32	167	20	5	5	0	9	30	51	47	339
1979	539	220	40.8	24	196	33	6	10	2	6	38	49	52	319
1980	485	207	42.7	27	180	27	4	5	1	5	31	54	53	278
1981	526	230	43.7	16	214	30	6	5	0	15	41	66	51	296
1982	614	261	42.5	36	225	25	7	6	1	7	47	74	58	353
1983	607	262	43.2	29	233	26	11	7	0	6	43	93	47	345
1984	607	290	47.8	34	256	47	2	11	3	8	44	84	57	317
1985	634	280	44.2	22	258	30	6	12	6	12	59	69	64	354
1986	678	326	48.1	35	291	40	5	12	7	17	66	88	56	352
1987	709	354	49.9	34	320	56	5	11	4	15	62	95	72	355
1988	695	394	56.7	63	331	63	8	4	2	21	76	93	64	301
1989	680	372	54.7	47	325	59	9	11	4	18	72	88	64	355
1990	813	448	55.1	53	395	70	13	10	5	23	88	103	83	418
1991	843	466	55.3	59	407	63	16	9	11	18	93	117	80	436
Totals	10,142	4,764	47.0	566	4,198	658	119	145	46	192	872	1,223	943	5,537

Note: 'Computer Sciences' introduced in 1977, 'Information Sciences' added in 1983.

SOURCE: *Summary Report, 1990 Doctorate Recipients from United States Universities,* National Research Council

TABLE 2-16

POSTDOCTORAL LOCATION OF NON-U.S. CITIZEN DOCTORATE RECIPIENTS WITH POSTGRADUATION COMMITMENTS, BY VISA STATUS AND MAJOR FIELD, 1990

	Postdoctoral Location							
	Permanent Visas				Temporary Visas			
	U.S. Location		Foreign Location		U.S. Location		Foreign Location	
Field of Doctorate	Empl	Study	Empl	Study	Empl	Study	Empl	Study
All Fields	60.4	25.7	10.1	3.8	28.1	26.0	36.4	9.4
Physical Sciences	48.3	37.4	7.5	6.8	23.8	43.0	20.1	13.2
Physics/Astronomy	22.2	58.3	0.0	19.4	11.9	58.6	10.6	18.9
Chemistry	42.0	46.0	8.0	4.0	11.6	56.3	15.1	16.9
Earth, Atmos. & Marine	54.5	27.3	18.2	0.0	14.0	36.6	37.6	11.8
Mathematics	59.1	27.3	13.6	0.0	38.2	27.5	25.8	8.6
Computer Sciences	82.1	7.1	7.1	3.6	55.9	13.1	29.0	2.1
Engineering	73.4	15.8	9.0	1.7	41.6	17.8	33.9	6.8
Life Sciences	19.3	65.0	7.9	7.9	6.0	44.8	36.5	12.7
Biological Sciences	14.4	74.0	2.9	8.7	4.4	63.6	19.5	12.5
Health Sciences	53.3	46.7	0.0	0.0	14.7	22.1	51.6	11.6
Agricultural Sciences	19.0	33.3	38.1	9.5	6.0	17.7	62.8	13.5
Social Sci. (incl. Psych.)*	73.5	16.2	8.5	1.7	33.8	8.9	51.1	6.2
Economics	82.5	0.0	17.5	0.0	36.7	4.3	53.8	5.2
Political Sci./Int'l. Relat.	66.7	11.1	11.1	11.1	33.3	1.9	57.4	7.4
Humanities	81.1	6.3	10.5	2.1	40.5	4.2	47.4	7.9
Education	63.2	14.0	19.3	3.5	14.7	2.2	77.2	5.8
Professional/Other*	80.0	2.5	16.3	1.3	51.1	2.2	41.3	5.4
Business & Management	80.8	1.9	15.4	1.9	62.0	2.3	31.7	4.1

NOTE: Only doctorates with definite commitments are included. Percentages are based on the number of Ph.D.s with known postgraduation plans and location in each field. See technical notes in Appendix C for rates of nonresponse to these questions and for further explanation of postgraduation plans.

*Totals include other fields not shown.

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 2-17

SOURCES OF SUPPORT DURING GRADUATE SCHOOL FOR DOCTORATE RECIPIENTS BY SEX, SELECTED YEARS, 1974 – 1991

YEAR	FEDERAL SUPPORT							FOR-EIGN GOVT.	NAT. FELL-OW-SHIPS+	INSTITUTIONAL FUNDS					PERSONAL FUNDS					UNDUP-LICATED TOTAL@
	NSF RA	NIH RA	Other Fed Res Asst	NSF Fellow	NIH Traineeship	GI Bill	Other Fed Support*			Univ TA	Univ RA^	Univ Fellow	Other Univ	Business/ Employer	Own Funds	Spouse Support	Family Support	Student Loans#	Other Sources	
MEN																				
1974				1,305	1,233	3,263	7,648			12,326	9,079	4,680	2,163	979	9678	4,948	1,632	3,308	1,282	24,761
1978				586	1,068	2,657	5,041			9,833	8,249	3,844	1,453	632	10,310	6,411	2,876	1,995	1,550	21,323
1982				496	906	1,421	4,617		563	9,317	8,329	3,651	1,430	735	9,698	15,459	3,432	2,247	1,545	19,664
1985				393	919	924	1,201		638	9,330	9,014	3,956	1,087	1,031	11,695	5,578	4,734	6,058	1,367	19,147
1988	1,478	778	921	261	690	519	1,130	1,263	790	10,185	8,429	3,765	1,419	1,052	10,044	4,276	4,589	4,989	582	19,578
1989	1,408	729	1,099	290	646	441	939	1,270	886	10,146	8,474	3,753	1,436	1,006	9,671	4,177	4,645	5,406	589	19,396
1990				294	645	345	920	1,364	913	10,699	11,418	3,306	1,669	1,235	10,671	5,151	5,201	4,645	485	21,062
1991				288	750	326	979	1,333	937	11,246	12,132	3,436	1,719	1,266	10,765	5,375	5,377	6,164	561	22,035
WOMEN																				
1974				206	441	22	1,892			2,786	1,421	1,360	701	108	2529	1,232	495	703	331	5,894
1978				139	473	50	1,998			3,360	1,957	1,422	678	142	4,489	2,590	1,215	799	537	7,799
1982				135	546	53	2,714		383	4,063	2,683	1,853	892	219	5,724	3,235	1,698	1,297	584	9,496
1985				161	651	66	895		507	4,463	3,193	2,154	911	488	7,271	3,592	2,336	3,825	488	10,090
1988	335	397	276	120	664	56	740	243	590	4,970	3,249	2,187	1,311	575	6,880	3,143	2,438	3,550	400	10,769
1989	319	443	340	149	642	82	741	245	560	5,234	3,533	2,672	1,273	572	7,007	3,202	2,529	4,201	450	11,275
1990				143	662	95	688	272	745	5,606	4,617	2,051	1,677	745	7,862	4,124	2,861	3,412	416	12,192
1991				157	767	72	810	309	747	6,095	5,055	1,978	1,646	779	8,249	4,522	2,960	4,934	483	13,070
% MEN																				
1974				5.3	5.0	13.2	30.9			49.8	36.7	18.9	8.7	4.0	39.1	20.0	6.6	13.4	5.2	
1978				2.7	5.0	12.5	23.6			46.1	38.7	18.0	6.8	3.0	48.4	30.1	13.5	9.4	7.3	
1982				2.5	4.6	7.2	23.5		2.9	47.4	42.4	18.6	7.3	3.7	49.3	78.6	17.5	11.4	7.9	
1985				2.1	4.8	4.8	6.3		3.3	48.7	47.1	20.7	5.7	5.4	61.1	29.1	24.7	31.6	7.1	
1988	7.5	4.0	4.7	1.3	3.5	2.7	5.8	6.5	4.0	52.0	43.1	19.2	7.2	5.4	51.3	21.8	23.4	25.5	3.0	
1989	7.3	3.8	5.7	1.5	3.3	2.3	4.8	6.5	4.6	52.3	43.7	19.3	7.4	5.2	49.9	21.5	23.9	27.9	3.0	
1990				1.4	3.1	1.6	4.4	6.5	4.3	50.8	54.2	15.7	7.9	5.9	50.7	24.5	24.7	22.1	2.3	
1991				1.3	3.4	1.5	4.4	6.0	4.3	51.0	55.1	15.6	7.8	5.7	48.9	24.4	24.4	28.0	2.5	
% WOMEN																				
1974				3.5	7.5	0.4	32.1			47.3	24.1	23.1	11.9	1.8	42.9	20.9	8.4	11.9	5.6	
1978				1.8	6.1	0.6	25.6			43.1	25.1	18.2	8.7	1.8	57.6	33.2	15.6	10.2	6.9	
1982				1.4	5.7	0.6	28.6		4.0	42.8	28.3	19.5	9.4	2.3	60.3	34.1	17.9	13.7	6.1	
1985				1.6	6.5	0.7	8.9		5.0	44.2	31.6	21.3	9.0	4.8	72.1	35.6	23.2	37.9	4.8	
1988	3.1	3.7	2.6	1.1	6.2	0.5	6.9	2.3	5.5	46.2	30.2	20.3	12.2	5.3	63.9	29.2	22.6	33.0	3.7	
1989	2.6	3.9	3.0	1.3	5.7	0.7	6.6	2.2	5.0	46.4	31.3	23.7	11.3	5.1	62.1	28.4	22.4	37.3	4.0	
1990				1.2	5.4	0.8	5.6	2.2	6.1	46.0	37.9	16.8	13.8	6.1	64.5	33.8	23.5	28.0	3.4	
1991				1.2	5.9	0.6	6.2	2.4	5.7	46.6	38.7	15.1	12.6	6.0	63.1	34.6	22.6	37.8	3.7	

RA = Research Assistants TA = Teaching Assistants ^ Because federal support obtained through the university cannot always be determined, no distinction is made between federal and university research assistants in this table. Both types of support are grouped under "University Research Assistant."

* Includes AEC/ERDA, NIH, USDA and NDEA Fellowships; NASA, NSF and NIH Traineeships; USDA Res. Asst.; Other HEW/HHS; Other Ed. Dept.; and Grad/Prof. Opp Program which were formerly shown separately. + Includes Woodrow Wilson Fellowships which were formerly shown separately.

Includes Guarenteed Student Loans, National Direct Student Loans, and Other Loans. @ PhDs who did not report sources of support are omitted from this total.

SOURCE: *Summary Report, 1990 Doctorate Recipients from United States Universities,* National Research Council

TABLE 2-18

PRIMARY SOURCE OF SUPPORT FOR DOCTORAL RECIPIENTS BY BROAD FIELD, SEX, AND CITIZENSHIP, 1990

Primary Source of Support	Total	Men	Women	U.S. Cits.	Perm. Res.	Temp. Res.
Total All Fields						
Personal	39.8	33.0	51.6	48.0	31.4	13.8
University	48.4	54.0	38.9	41.8	60.6	68.8
Federal	5.1	5.1	5.2	6.6	1.2	1.1
Other	6.6	8.0	4.3	3.7	6.8	16.3
Physical Sciences*						
Personal	13.5	13.3	14.4	17.4	14.2	5.4
University	77.7	77.7	77.5	73.4	82.2	85.7
Federal	3.8	3.5	5.2	5.7	0.4	0.6
Other	5.0	5.5	2.9	3.5	3.1	8.3
Engineering						
Personal	15.5	15.8	13.1	21.5	18.8	9.1
University	68.7	68.5	70.3	59.5	73.4	76.9
Federal	4.5	4.3	6.8	9.4	0.3	0.3
Other	11.3	11.5	9.8	9.5	7.5	13.7
Life Sciences						
Personal	23.3	19.7	29.1	27.1	25.9	10.3
University	54.5	57.6	49.6	51.9	61.0	62.5
Federal	14.0	12.6	16.2	18.2	4.4	1.7
Other	8.1	10.1	5.1	2.9	8.8	25.5
Social Sciences						
Personal	52.2	47.3	57.7	58.0	41.7	22.2
University	38.9	41.7	35.8	35.6	47.6	55.8
Federal	3.7	3.9	3.5	4.2	1.2	1.3
Other	5.2	7.1	3.0	2.2	9.5	20.7
Humanities						
Personal	48.3	49.2	47.4	50.8	45.3	28.7
University	46.0	44.3	47.9	44.4	51.1	56.6
Federal	1.8	2.4	1.2	1.8	0.7	3.1
Other	3.9	4.2	3.5	3.0	2.9	11.5
Education						
Personal	78.3	77.3	79.0	81.4	68.8	41.2
University	14.3	12.8	15.4	13.0	24.7	28.1
Federal	1.8	2.7	1.2	1.8	0.0	2.6
Other	5.6	7.2	4.4	3.8	6.5	28.1
Professional/Other						
Personal	54.3	52.3	57.9	63.0	47.1	27.6
University	36.5	37.6	34.6	30.5	42.3	54.9
Federal	1.7	1.6	1.9	2.0	1.0	1.0
Other	7.4	8.5	5.7	4.5	9.6	16.4

NOTE: Percentages are based on the number of Ph.D.s with known primary support. "Personal" includes loans as well as own earnings and contributions from the spouse/family. Federally funded research assistantships (RAs) are grouped under "University" because recipients of such support may not be aware of the actual source of funding. It is believed that many of these Ph.D.s are reporting their support as university RA instead of federal RA. "Other" support includes U.S. nationally competitive fellowships, business/employer funds, foreign government, and other nonspecified sources. See technical notes in Appendix C for rates of nonresponse to this question.

*Includes mathematics and computer sciences.

SOURCE: Digest of Education Statistics, National Center for Education Statistics

TABLE 2-19

EARNED DEGREES CONFERRED BY INSTITUTIONS OF HIGHER EDUCATION, BY LEVEL OF DEGREE AND SEX 1869–70 TO 1994–95

Year	Bachelor's Degrees				Master's Degrees				Doctor's Degrees			
	Total	Men	Women	%Wom	Total	Men	Women	%Wom	Total	Men	Women	%Wom
1869–70	9,371	7,993	1,378	14.7	0	0	0		1	1	0	0.0
1879–80	12,896	10,411	2,485	19.3	879	868	11	1.3	54	51	3	5.6
1889–90	15,539	12,857	2,682	17.3	1,015	821	194	19.1	149	147	2	1.3
1899–1990	27,410	22,173	5,237	19.1	1,583	1,280	303	19.1	382	359	23	6.0
1909–10	37,199	28,762	8,437	22.7	2,113	1,555	558	26.4	443	399	44	9.9
1919–20	48,622	31,980	16,642	34.2	4,279	2,985	1,294	30.2	615	522	93	15.1
1929–30	122,484	73,615	48,869	39.9	14,969	8,925	6,044	40.4	2,299	1,946	353	15.4
1939–40	186,500	109,546	76,954	41.3	26,731	16,508	10,223	38.2	3,290	1,861	429	13.0
1949–50	433,734	303,451	130,283	30.0	58,183	41,220	16,963	29.2	6,633	5,804	616	9.3
1959–60	394,889	255,504	139,385	35.3	74,497	50,960	23,537	31.6	9,829	8,801	1,028	10.5
1960–61	401,784	255,900	145,884	36.3	78,269	51,846	26,423	33.8	10,575	9,463	1,112	10.5
1961–62	420,485	262,015	158,470	37.7	84,889	56,185	28,704	33.8	11,622	10,377	1,245	10.7
1962–63	450,592	274,750	175,842	39.0	91,418	60,146	31,272	34.2	12,822	11,448	1,374	10.7
1963–64	502,104	299,813	202,291	40.3	101,122	65,910	35,212	34.8	14,490	12,955	1,535	10.6
1964–65	538,930	319,670	219,260	40.7	112,195	72,587	39,608	35.3	16,467	14,692	1,775	10.8
1965–66	555,613	331,122	224,491	40.4	140,772	93,287	47,485	33.7	18,239	16,121	2,118	11.6
1966–67	594,862	355,300	239,562	40.3	157,892	103,277	54,615	34.6	20,621	18,167	2,454	11.9
1967–68	671,591	392,830	278,761	41.5	177,150	113,920	63,230	35.7	23,091	20,185	2,906	12.6
1968–69	769,683	446,933	322,750	41.9	194,414	122,189	72,225	37.2	26,189	22,753	3,436	13.1
1969–70	833,322	486,949	346,373	41.6	209,414	126,747	82,667	39.5	29,872	25,892	3,980	13.3
1970–71	884,386	514,220	370,166	41.9	231,486	139,123	92,363	39.9	32,113	27,534	4,579	14.3
1971–72	937,884	544,652	393,232	41.9	252,774	150,691	102,083	40.4	33,369	28,095	5,274	15.8
1972–73	960,707	548,361	412,346	42.9	264,525	155,622	108,903	41.2	34,790	28,575	6,215	17.9
1973–74	1,006,654	577,811	428,843	42.6	278,259	159,068	119,191	42.8	33,826	27,374	6,452	19.1
1974–75	987,922	557,656	430,266	43.6	293,651	162,771	130,880	44.6	34,086	26,819	7,267	21.3
1975–76	997,504	561,759	435,745	43.7	313,001	168,478	144,523	46.2	34,076	26,273	7,803	22.9
1976–77	993,008	551,789	441,219	44.4	318,241	168,860	149,381	46.9	33,244	25,150	8,094	24.3
1977–78	997,165	543,619	453,546	45.5	312,816	162,408	150,408	48.1	32,156	23,669	8,487	26.4
1978–79	1,000,562	534,303	466,259	46.6	302,075	154,366	147,709	48.9	32,758	23,557	9,201	28.1
1979–80	940,251	477,750	462,501	49.2	299,095	151,763	147,332	49.3	31,020	21,612	9,408	30.3
1980–81	946,877	475,995	470,882	49.7	296,798	148,102	148,696	50.1	31,357	21,465	9,892	31.5
1981–82	964,043	479,231	484,812	50.3	296,480	146,466	150,014	50.6	31,111	21,018	10,093	32.4
1982–83	960,679	464,985	495,694	51.6	290,931	145,707	145,224	49.9	31,282	20,749	10,533	33.7
1983–84	986,345	489,408	496,937	50.4	284,461	143,793	140,668	49.5	31,227	20,528	10,699	34.3
1984–85	990,880	489,263	501,617	50.6	287,210	144,349	142,861	49.7	31,297	20,553	10,744	34.3
1985–86	1,000,352	492,797	507,555	50.7	289,823	144,764	145,059	50.1	31,895	20,591	11,304	35.4
1986–87	1,003,532	485,003	518,529	51.7	290,532	142,338	148,194	51.0	32,364	20,938	11,426	35.3
1987–88	1,006,033	481,236	524,797	52.2	300,091	146,281	153,810	51.3	33,490	21,679	11,811	35.3
1988–89	1,016,350	481,946	534,404	52.6	309,770	148,872	160,898	51.9	35,659	22,597	13,062	36.6
1989–90	1,046,930	490,101	556,829	53.2	321,992	152,907	169,085	52.5	37,980	24,218	13,762	36.2
1990–91	1,084,000	498,000	586,000	54.1	337,000	157,000	180,000	53.4	40,000	25,000	15,000	35.0
1991–92	1,059,403	502,742	556,661	52.5	322,343	155,955	166,388	51.6	35,964	20,964	13,816	41.7
1992–93	1,062,495	505,585	556,910	52.4	323,163	155,264	167,899	52.0	36,089	21,823	14,266	39.5
1993–94	1,058,536	506,173	552,363	52.2	323,444	154,330	169,114	52.3	36,183	21,457	14,726	40.7
1994–95	1,046,687	501,662	545,025	52.1	323,741	153,746	169,995	52.5	36,301	21,107	15,194	41.9

Note: 1990–91 through 1994–95 data are NCES estimates

SOURCE: Earned Degrees Conferred Series, 1971–72 through 1989–90, National Center for Education Statistics

TABLE 2-20

PERCENT OF BACHELORS AND MASTERS DEGREES AWARDED TO WOMEN, BY FIELD, SELECTED YEARS, 1971–72 – 1989–90

	BACHELORS DEGREES											MASTERS DEGREES										
Field	1971 –72	1973 –74	1975 –76	1977 –78	1980 –81	1982 –83	1984 –85	1986 –87	1987 –88	1988 –89	1989 –90	1971 –72	1973 –74	1975 –76	1977 –78	1980 –81	1982 –83	1984 –85	1986 –87	1987 –88	1988 –89	1989 –90
Agricul. Sci & Nat. Resources	5.5	9.7	18.3	24.6	30.8	32.6	31.1	31.2	35.3	31.1	33.9	7.1	9.8	14.3	18.7	23.5	26.5	27.5	30.1	31.7	31.2	36.0
Architecture & Environ. Design	12.0	14.8	19.2	23.7	28.1	34.8	35.5	37.3	38.7	39.3	39.1	14.6	18.4	20.8	26.0	29.1	33.8	34.4	34.0	35.4	35.1	33.5
Area & Ethinc Studies	52.5	54.3	55.5	59.7	60.1	63.0	61.7	61.7	59.8	59.2	60.0	40.7	38.9	45.3	47.8	51.6	50.2	47.2	46.9	45.3	49.2	45.2
Business Mgt. & Office & Mark	9.7	13.1	19.8	27.3	36.7	42.0	45.1	46.5	45.9	46.7	46.7	3.9	6.6	11.6	16.9	25.0	28.9	31.0	33.0	33.5	33.6	34.0
Communications	35.5	38.4	41.5	46.9	54.7	58.6	59.6	60.0	60.7	60.4	61.0	34.4	36.8	41.8	49.3	53.4	54.0	58.2	59.2	60.6	59.6	61.5
Communications Technologies						47.4	46.7	46.7	44.1	43.9	46.3						51.0	38.3	36.5	50.6	44.6	49.8
Computer & Inform. Science	13.6	16.4	19.8	25.8	32.5	36.3	36.8	43.6	32.4	30.7	30.1	11.4	12.9	14.5	18.7	23.0	28.3	28.7	29.4	26.9	27.9	27.7
Education	74.1	73.5	72.8	72.5	75.0	75.8	75.9	76.2	76.9	77.7	78.1	57.3	59.9	64.3	67.7	71.5	72.3	72.5	74.0	75.1	75.3	75.8
Engineering	1.1	1.6	3.4	7.4	11.1	13.3	14.5	15.2	15.3	15.2	15.3	1.6	2.3	3.6	5.2	8.1	9.3	10.7	12.5	12.4	13.0	13.6
Engineering & Related Tech	0.8	1.4	2.1	2.8	5.8	8.0	7.7	7.7	8.0	8.2	8.2	4.0	4.3	4.3	6.9	12.1	9.8	10.5	13.6	16.0	12.8	17.5
Foreign Languages	75.1	76.4	76.4	76.1	75.6	74.3	73.4	72.6	72.8	73.3	73.4	65.1	66.1	66.7	70.8	67.0	65.7	67.6	70.4	68.1	68.5	68.6
Health Sciences	75.7	77.4	78.8	80.6	83.5	84.2	84.8	85.5	86.6	84.9	85.7	56.4	60.2	66.5	70.3	73.9	75.2	76.2	78.9	78.9	78.1	78.3
Home Econ & Vocational Econ	96.5	96.4	95.9	95.6	95.0	94.3	93.5	92.5	91.7	90.6	90.1	92.7	91.1	91.5	91.9	90.2	90.8	88.3	87.6	88.1	85.7	85.6
Law	6.6	10.5	18.8	28.6	50.0	58.4	61.2	68.6	68.3	60.3	68.2	5.8	7.1	12.0	14.6	17.8	23.3	23.3	26.8	26.3	28.9	29.9
Letters	60.1	58.0	56.9	57.2	59.8	65.8	65.8	65.8	66.7	67.1	67.0	57.7	56.6	58.3	61.8	61.1	65.1	65.2	65.0	65.8	65.6	65.9
Liberal/General Studies						54.1	55.3	56.4	56.4	57.2	58.3						61.5	61.9	59.2	61.9	64.8	65.2
Library & Archival Scinces	93.3	92.6	93.1	88.5	94.1	89.2	87.1	85.6	86.2	86.9	81.0	79.9	77.8	78.3	80.0	82.7	81.5	80.5	79.1	78.7	79.3	77.9
Life Sciences	29.6	31.5	34.8	38.7	44.1	46.1	47.8	48.5	50.3	50.2	50.7	33.1	30.6	31.8	35.5	38.9	43.6	47.7	48.7	49.3	49.6	51.1
Mathematics	39.1	41.0	40.7	41.3	42.8	43.8	46.1	46.4	46.4	46.0	46.5	29.8	31.0	34.0	34.0	34.1	34.5	35.0	39.1	40.1	39.9	40.0
Military Science & Tech	0.0	0.3	0.2	2.3	3.9	10.9	8.7	6.8	5.2	9.8	7.9	0.0	0.0	0.0	2.2	0.0	0.9	0.8	2.4	2.0		
Multi–Interdisc Studies	31.1	37.1	45.0	47.3	51.0	49.6	52.2	53.4	52.8	53.8	54.4	39.2	45.8	46.5	37.5	39.8	42.8	42.1	42.0	41.9	39.0	42.3
Parks & Recreation						63.0	62.1	60.2	58.8	59.0	55.9						53.3	55.7	55.3	55.5	53.7	58.4
Philosophy & Religion						33.0	33.7	35.7	35.3	35.7	36.1						38.9	39.9	37.0	38.5	40.7	36.7
Physical Sciences	15.1	16.6	19.2	21.5	24.6	27.3	27.9	28.4	30.3	29.7	31.2	14.1	14.6	15.0	17.0	18.4	21.4	23.2	24.9	24.4	26.7	26.4
Protective Services						39.3	38.5	38.3	37.5	38.0	37.4						26.9	31.2	29.4	29.0	31.0	30.8
Psychology	46.4	50.5	54.4	58.9	65.0	67.5	68.1	68.9	70.0	70.8	71.5	38.4	39.8	46.7	52.0	58.0	61.4	63.8	65.2	67.1	67.4	67.6
Public Affairs	47.9	43.5	43.7	49.6	58.0	69.9	66.5	68.0	68.1	67.6	67.3	47.0	45.3	45.3	47.9	55.4	62.4	63.0	63.7	63.1	64.3	65.6
Social Sciences	36.3	36.6	37.9	40.0	44.2	44.6	44.1	44.0	43.9	44.4	44.2	28.2	28.8	31.6	33.2	37.6	37.8	38.3	39.5	39.4	40.2	40.8
Theology	27.8	28.1	27.4	24.1	25.4	27.1	27.1	24.2	25.0	22.8	24.1	23.4	27.2	32.1	39.5	33.6	27.1	34.8	33.9	33.8	35.1	36.0
Visual & Performing Arts	59.9	60.2	60.9	62.0	63.4	62.8	61.8	62.0	61.5	61.5	66.5	46.3	45.9	48.9	52.1	53.0	54.1	55.3	55.8	56.8	56.3	65.7
ALL FIELDS	43.7	44.4	45.6	47.2	49.8	50.6	50.7	51.5	52.0	52.6	53.1	40.6	43.1	46.4	48.3	50.3	50.1	49.9	51.2	51.5	51.9	52.6

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 2-21

PhD DEGREES BY SCIENCE AND ENGINEERING BY FIELD AND SEX, 1950 – 1991

								Science/Engineering Fields																					
	All Fields			Total S/E				Physical/Envt Sci			Engineering			Math/Comp Sci			Ag & Bio Sci			Psychology			Social Sciences			All Other Fields		
Year	Total	Women	%W	No.	%T	Wom	%W	No.	Wom	%W	No.	Wom	%W	No.	Wom	%W	No.	Wom	%W	No.	Wom	%W	No.	Wom	%W	No.	Wom	%W
1950	6,633	643	10	3,890	59	244	6	1,498	49	3.3	417	1	0.2	160	9	5.6	1,033	95	9	283	42	15	499	48	10	2,743	399	15
1951	7,338	674	9	4,618	63	291	6	1,681	64	3.8	520	1	0.2	184	9	4.9	1,192	102	9	425	57	13	616	58	9	2,720	383	14
1952	7,683	714	9	4,783	62	294	6	1,720	57	3.3	529	3	0.6	206	11	5.3	1,187	94	8	540	73	14	601	56	9	2,900	420	14
1953	8,309	792	10	5,114	62	322	6	1,714	62	3.6	518	1	0.2	241	14	5.8	1,443	123	9	583	79	14	615	43	7	3,195	470	15
1954	8,996	815	9	5,433	60	310	6	1,686	61	3.6	594	0	0.0	227	14	6.2	1,628	111	7	619	66	11	679	58	9	3,563	505	14
1955	8,840	826	9	5,436	61	302	6	1,713	52	3.0	599	0	0.0	250	11	4.4	1,505	107	7	688	84	12	681	48	7	3,404	524	15
1956	8,903	885	10	5,327	60	349	7	1,667	68	4.1	610	0	0.0	235	10	4.3	1,404	123	9	634	86	14	777	62	8	3,576	536	15
1957	8,756	939	11	5,233	60	345	7	1,674	71	4.2	596	1	0.2	249	13	5.2	1,449	122	8	550	90	16	715	48	7	3,523	594	17
1958	8,942	964	11	5,353	60	378	7	1,655	66	4.0	647	4	0.6	247	15	6.1	1,465	144	10	572	84	15	767	65	8	3,589	586	16
1959	9,360	989	11	5,635	60	376	7	1,812	69	3.8	714	1	0.1	282	15	5.3	1,427	120	8	635	96	15	765	73	10	3,725	613	16
1960	9,829	1,028	10	6,056	62	382	6	1,838	62	3.4	786	3	0.4	303	18	5.9	1,647	126	8	641	97	15	841	76	9	3,773	646	17
1961	10,575	1,112	11	6,531	62	449	7	1,991	70	3.5	943	6	0.6	344	17	4.9	1,646	144	9	703	136	19	904	76	8	4,044	663	16
1962	11,622	1,245	11	7,249	62	501	7	2,122	87	4.1	1,207	4	0.3	396	24	6.1	1,804	161	9	781	149	19	939	76	8	4,373	744	17
1963	12,822	1,374	11	8,055	63	573	7	2,380	95	4.0	1,378	11	0.8	490	36	7.3	1,908	184	10	844	144	17	1,055	103	10	4,767	801	17
1964	14,490	1,535	11	9,025	62	632	7	2,455	113	4.6	1,693	7	0.4	596	29	4.9	2,181	203	9	939	182	19	1,161	98	8	5,465	903	17
1965	16,467	1,775	11	10,252	62	709	7	2,829	127	4.5	2,124	10	0.5	688	60	8.7	2,474	246	10	847	159	19	1,290	107	8	6,215	1,066	17
1966	18,239	2,118	12	11,298	62	875	8	3,045	131	4.3	2,304	9	0.4	801	57	7.1	2,696	314	12	1,046	220	21	1,406	144	10	6,941	1,243	18
1967	20,621	2,457	12	12,759	62	1,013	8	3,462	162	4.7	2,614	11	0.4	870	60	6.9	2,900	354	12	1,231	232	19	1,682	194	12	7,862	1,444	18
1968	23,091	2,906	13	14,128	61	1,204	9	3,593	188	5.2	2,932	12	0.4	983	52	5.3	3,445	452	13	1,268	286	23	1,907	214	11	8,963	1,702	19
1969	26,189	3,436	13	15,839	60	1,375	9	3,859	206	5.3	3,377	12	0.4	1,161	70	6.0	3,779	484	13	1,551	356	23	2,112	247	12	10,350	2,061	20
1970	29,872	3,980	13	17,839	59	1,527	9	4,313	236	5.5	3,681	24	0.7	1,343	98	7.3	4,131	499	12	1,668	372	22	2,503	298	12	12,233	2,453	20
1971	32,113	4,579	14	18,466	58	1,800	10	4,391	246	5.6	3,654	23	0.6	1,327	96	7.2	4,534	624	14	1,782	427	24	2,778	384	14	13,647	2,779	20
1972	33,369	5,274	16	18,412	55	1,910	10	4,103	273	6.7	3,704	25	0.7	1,295	101	7.8	4,478	647	14	1,881	467	25	2,951	397	13	14,957	3,364	22
1973	34,790	6,215	18	18,598	53	2,288	12	4,016	274	6.8	3,560	64	1.8	1,264	117	9.3	4,524	734	16	2,089	605	29	3,145	494	16	16,192	3,927	24
1974	33,826	6,452	19	17,865	53	2,412	14	3,631	253	7.0	3,336	55	1.6	1,229	109	8.9	4,220	732	17	2,339	691	30	3,110	572	18	15,961	4,040	25
1975	34,086	7,267	21	17,784	52	2,637	15	3,628	302	8.3	3,151	67	2.1	1,188	124	10.4	4,252	782	18	2,442	754	31	3,123	608	19	16,302	4,630	28
1976	34,076	7,803	23	17,288	51	2,786	16	3,433	300	8.7	2,835	69	2.4	1,100	117	10.6	4,203	791	19	2,581	819	32	3,136	690	22	16,788	5,017	30
1977	33,244	8,094	24	16,937	51	2,958	17	3,344	320	9.6	2,599	74	2.8	1,039	128	12.3	4,199	791	19	2,761	991	36	2,995	654	22	16,307	5,136	31
1978	32,156	8,487	26	16,196	50	3,039	19	3,137	312	9.9	2,442	57	2.3	1,001	139	13.9	4,179	872	21	2,597	971	37	2,840	688	24	15,960	5,448	34
1979	32,756	9,201	28	16,363	50	3,310	20	3,104	350	11.3	2,517	83	3.3	966	152	15.7	4,501	1,031	23	2,674	1,071	40	2,699	680	25	16,393	5,891	36
1980	31,020	9,406	30	17,524	56	3,784	10	3,149	386	12.3	2,479	90	0.4	962	116	12.1	4,715	1,150	24	3,098	1,311	42	3,121	831	27	13,496	5,523	41
1981	31,357	9,892	32	17,996	57	4,116	23	3,210	365	11.4	2,528	99	3.9	960	138	14.4	4,786	1,221	26	3,358	1,473	44	3,154	820	26	13,361	5,776	43
1982	31,111	10,093	32	18,017	58	4,270	24	3,351	460	13.7	2,646	124	4.7	940	116	12.3	4,844	1,292	27	3,159	1,438	46	3,077	840	27	13,089	5,823	44
1983	31,282	10,533	34	18,393	59	4,624	25	3,439	468	13.6	2,781	124	4.5	987	149	15.1	4,756	1,366	29	3,347	1,597	48	3,083	920	30	12,887	5,909	46
1984	31,227	10,699	34	18,514	59	4,704	25	3,459	505	14.6	2,913	151	5.2	993	152	15.3	4,877	1,348	28	3,257	1,631	50	3,015	917	30	12,818	5,995	47
1985	31,297	10,744	34	18,710	59	4,811	26	3,433	575	16.7	3,166	198	6.3	998	139	13.9	4,903	1,409	29	3,117	1,541	49	2,994	950	32	12,581	5,933	47
1986	31,895	11,304	35	19,253	60	5,085	26	3,679	605	16.4	3,376	225	6.7	1,128	169	15.0	4,805	1,452	30	3,124	1,598	51	3,140	1,035	33	12,643	6,221	49
1987	32,364	11,426	35	19,713	61	5,237	27	3,840	640	16.7	3,712	242	6.5	1,190	190	16.0	4,816	1,632	32	3,169	1,695	53	2,980	936	31	12,654	6,189	49
1988	33,490	11,811	35	20,732	62	5,573	27	4,046	702	17.4	4,190	286	6.8	1,264	177	14.0	5,127	1,691	33	3,064	1,676	55	3,051	1,045	34	12,724	6,217	49
1989	34,319	12,508	36	21,530	63	6,008	28	3,984	767	19.3	4,544	375	8.3	1,471	263	17.9	5,203	1,770	34	3,203	1,797	56	3,125	1,036	33	12,789	6,500	51
1990	36,027	13,061	36	22,673	63	6,274	28	4,263	800	18.8	4,892	414	8.5	1,596	268	16.8	5,509	1,852	34	3,267	1,906	58	3,146	1,034	33	13,354	6,787	51
1991	37,451	13,765	37	23,494	63	6,636	28	4,439	844	19.0	5,212	452	8.7	1,837	310	16.9	5,879	2,004	34	3,240	1,984	61	2,887	1,042	36	13,957	7,129	51
50–59	83,760	8,241	10	50,822	61	3,211	6	16,820	619	3.7	5,744	12	0.2	2,281	121	5.3	13,733	1,141	8	5,529	759	14	6,715	559	8	32,938	5,030	15
60–69	163,945	18,986	12	101,192	62	7,713	8	27,574	1,241	4.5	19,358	85	0.4	6,632	423	6.4	24,480	2,668	11	9,851	1,961	20	13,297	1,335	10	62,753	11,273	18
70–79	330,288	67,352	20	175,548	53	24,667	14	37,100	2,866	7.7	31,479	541	1.7	11,752	1,181	10.0	43,123	7,446	17	22,814	7,168	31	29,280	5,485	19	154,740	42,685	28
80–89	319,362	108,418	34	190,382	60	48,212	25	35,590	5,473	15.4	32,335	1,914	5.9	10,893	1,609	14.8	48,832	14,331	29	31,896	15,757	49	30,740	9,330	30	129,042	60,086	47
Total	934,806	216,762	23	541,438	58	90,439	17	121,523	11,043	9.1	94,128	3,004	3.2	33,395	3,644	10.9	136,047	27,560	20	73,330	27,629	38	82,619	17,751	21	393,430	126,203	32

Note: Starting in 1960 data source is Survey of Earned Doctorates by the National Research Council.

Source: Earned Degrees Conferred Series, 1950–1990, National Center for Education Statistics, Redefined by the National Science Foundation

TABLE 2-22

MASTERS DEGREES BY SCIENCE AND ENGINEERING FIELD AND SEX, 1950 – 1990

	All Fields			Total S/E			Science/Engineering Fields																					
							Physical Sciences			Engineering			Math/Comp Sci			Bio/Agri Sci			Psychology			Social Sciences			All Other Fields		
YEAR	Total	Women	%W	Number	%T	Women	%W	No.	Women	%W	No.	Women	%W	No.	Women	%W	No.	Women	%W	No.	Women	%W	No.	Women	%W	No.	Women	%W
1950	58,219	16,982	29.2	16,596	28.5	1,856	11.2	3,184	265	8.3	4,496	15	0.3	974	190	19.5	4,158	534	12.8	1,316	368	28.0	2,468	484	19.6	41,623	15,126	36.3
1951	65,132	18,901	29.0	17,539	26.9	1,713	9.8	3,200	226	7.1	4,825	10	0.2	1,109	180	16.2	4,417	527	11.9	1,645	395	24.0	2,343	375	16.0	47,593	17,188	36.1
1952	63,471	19,934	31.4	15,544	24.5	1,527	9.8	3,054	224	7.3	4,091	18	0.4	802	139	17.3	4,184	467	11.2	1,406	340	24.2	2,007	339	16.9	47,927	18,407	38.4
1953	61,023	20,034	32.8	13,548	22.2	1,290	9.5	2,711	164	6.0	3,566	13	0.4	677	112	16.5	3,568	410	11.5	1,161	265	22.8	1,865	326	17.5	47,475	18,744	39.5
1954	56,823	18,676	32.9	13,399	23.6	1,352	10.1	2,374	177	7.5	4,204	15	0.4	706	127	18.0	3,007	358	11.9	1,254	369	29.4	1,854	306	16.5	43,424	17,324	39.9
1955	58,204	19,464	33.4	13,989	24.0	1,563	11.2	2,544	207	8.1	4,484	13	0.3	761	148	19.4	3,090	433	14.0	1,293	417	32.3	1,817	345	19.0	44,215	17,901	40.5
1956	59,294	19,897	33.6	14,061	23.7	1,438	10.2	2,655	220	8.3	4,724	19	0.4	896	179	19.9	2,867	406	14.2	973	283	29.1	1,944	331	17.0	45,233	18,459	40.8
1957	61,955	20,623	33.3	15,205	24.5	1,573	10.3	2,704	221	8.2	5,233	16	0.3	965	188	19.5	3,019	403	13.3	1,095	332	30.3	2,189	413	18.9	46,750	19,050	40.7
1958	65,614	21,362	32.6	16,840	25.7	1,779	10.6	3,034	271	8.9	5,788	20	0.3	1,234	240	19.4	3,179	458	14.4	1,235	399	32.3	2,370	391	16.5	48,774	19,583	40.2
1959	69,584	22,176	31.9	18,662	26.8	1,976	10.6	3,179	270	8.5	6,753	24	0.4	1,499	311	20.7	3,537	561	15.9	1,254	397	31.7	2,460	413	16.8	50,902	20,200	39.7
1960	74,497	23,560	31.6	20,012	26.9	2,074	10.4	3,387	327	9.7	7,159	26	0.4	1,765	337	19.1	3,751	573	15.3	1,406	425	30.2	2,544	386	15.2	54,485	21,486	39.4
1961	78,269	24,111	30.8	22,786	29.1	2,464	10.8	3,799	345	9.1	8,178	28	0.3	2,238	466	20.8	4,085	670	16.4	1,719	543	31.6	2,767	412	14.9	55,483	21,647	39.0
1962	84,889	26,184	30.8	25,146	29.6	2,812	11.2	3,929	385	9.8	8,909	40	0.4	2,680	501	18.7	4,672	785	16.8	1,832	563	30.7	3,124	538	17.2	59,743	23,372	39.1
1963	91,418	28,474	31.1	27,367	29.9	3,194	11.7	4,132	428	10.4	9,635	32	0.3	3,323	658	19.8	4,718	894	18.9	1,918	573	29.9	3,641	609	16.7	64,051	25,280	39.5
1964	101,122	32,110	31.8	30,271	29.9	3,567	11.8	4,567	410	9.0	10,827	34	0.3	3,603	689	19.1	5,357	1,084	20.2	2,059	688	33.4	3,858	662	17.2	70,851	28,543	40.3
1965	112,195	35,984	32.1	33,835	30.2	4,082	12.1	4,918	513	10.4	12,056	44	0.4	4,294	812	18.9	5,978	1,162	19.4	2,241	732	32.7	4,348	819	18.8	78,360	31,902	40.7
1966	140,772	47,568	33.8	38,063	27.1	4,882	12.8	4,992	528	10.6	13,676	76	0.6	5,010	1,018	20.3	6,666	1,380	20.7	2,530	850	33.6	5,207	1,030	19.8	102,689	42,706	41.6
1967	157,892	54,713	34.7	41,800	26.5	5,717	13.7	5,412	553	10.2	13,885	78	0.6	5,733	1,310	22.9	7,465	1,517	20.3	3,138	1,062	33.8	6,167	1,197	19.4	116,092	48,996	42.2
1968	177,150	63,401	35.8	45,425	25.6	6,512	14.3	5,508	635	11.5	15,188	99	0.7	6,061	1,361	22.4	8,315	1,864	22.4	3,482	1,159	33.3	6,851	1,394	20.3	131,725	56,889	43.2
1969	194,414	72,533	37.3	48,425	24.9	7,314	15.1	5,911	668	11.3	15,243	113	0.7	6,735	1,566	23.3	8,809	2,016	22.9	4,013	1,327	33.1	7,714	1,624	21.1	145,989	65,219	44.7
1970	209,387	83,241	39.8	49,318	23.6	8,577	17.4	5,948	847	14.2	15,597	172	1.1	7,107	1,809	25.5	8,590	2,216	25.8	4,120	1,566	38.0	7,956	1,967	24.7	160,069	74,664	46.6
1971	231,486	92,896	40.1	50,624	21.9	8,658	17.1	6,386	853	13.4	16,347	187	1.1	6,789	1,688	24.9	8,320	2,190	26.3	4,438	1,651	37.2	8,344	2,089	25.0	180,862	84,238	46.6
1972	252,774	102,689	40.6	53,567	21.2	9,557	17.8	6,307	888	14.1	16,802	281	1.7	7,186	1,777	24.7	8,914	2,327	26.1	5,293	2,033	38.4	9,065	2,251	24.8	199,207	93,132	46.8
1973	264,525	109,525	41.4	54,234	20.5	9,760	18.0	6,274	847	13.5	16,758	288	1.7	7,146	1,730	24.2	9,080	2,237	24.6	5,882	2,367	40.2	9,094	2,291	25.2	210,291	99,765	47.4
1974	278,259	119,915	43.1	54,175	19.5	10,545	19.5	6,087	887	14.6	15,393	362	2.4	7,116	1,793	25.2	9,605	2,410	25.1	6,616	2,630	39.8	9,358	2,463	26.3	224,084	109,370	48.8
1975	293,651	131,536	44.8	53,852	18.3	11,005	20.4	5,830	848	14.5	15,434	396	2.6	6,637	1,766	26.6	9,618	2,411	25.1	7,104	3,045	42.9	9,229	2,539	27.5	239,799	120,531	50.3
1976	313,001	145,256	46.4	54,747	17.5	12,072	22.1	5,485	825	15.0	16,170	589	3.6	6,466	1,690	26.1	9,823	2,619	26.7	7,859	3,671	46.7	8,944	2,678	29.9	258,254	133,184	51.6
1977	318,241	150,031	47.1	56,731	17.8	13,154	23.2	5,345	887	16.6	16,889	733	4.3	6,496	1,766	27.2	10,707	3,011	28.1	8,320	4,004	48.1	8,974	2,753	30.7	261,510	136,877	52.3
1978	312,816	151,108	48.3	56,237	18.0	13,690	24.3	5,576	946	17.0	17,015	871	5.1	6,421	1,717	26.7	10,711	3,226	30.1	8,194	4,263	52.0	8,320	2,667	32.1	256,579	137,418	53.6
1979	302,075	148,303	49.1	54,456	18.0	14,040	25.8	5,464	992	18.2	16,193	990	6.1	6,101	1,632	26.7	10,719	3,460	32.3	8,031	4,343	54.1	7,948	2,623	33.0	247,619	134,263	54.2
1980	299,095	147,936	49.5	54,391	18.2	14,383	26.4	5,233	975	18.6	16,846	1,190	7.1	6,515	1,800	27.6	10,278	3,326	32.4	7,861	4,464	56.8	7,658	2,628	34.3	244,704	133,553	54.6
1981	296,798	149,367	50.3	54,811	18.5	15,014	27.4	5,300	1,087	20.5	17,373	1,406	8.1	6,787	1,848	27.2	9,731	3,280	33.7	8,039	4,668	58.1	7,581	2,725	35.9	241,987	134,353	55.5
1982	296,480	150,639	50.8	56,925	19.2	15,976	28.1	5,526	1,201	21.7	18,594	1,684	9.1	7,666	2,220	29.0	9,724	3,509	36.1	7,849	4,621	58.9	7,566	2,741	36.2	239,555	134,663	56.2
1983	290,931	145,817	50.1	58,868	20.2	17,081	29.0	5,288	1,137	21.5	19,721	1,876	9.5	8,160	2,488	30.5	9,720	3,609	37.1	8,439	5,185	61.4	7,540	2,786	36.9	232,063	128,736	55.5
1984	285,462	141,464	49.6	59,569	20.9	17,675	29.7	5,568	1,315	23.6	20,352	2,159	10.6	8,939	2,765	30.9	9,330	3,602	38.6	8,073	5,093	63.1	7,307	2,741	37.5	225,893	123,789	54.8
1985	287,210	143,493	50.0	61,278	21.3	18,299	29.9	5,802	1,352	23.3	21,206	2,326	11.0	9,989	3,048	30.5	8,757	3,492	39.9	8,481	5,417	63.9	7,043	2,662	37.8	225,932	125,194	55.4
1986	289,823	145,891	50.3	62,526	21.6	19,182	30.7	5,910	1,434	24.3	21,314	2,471	11.6	11,241	3,528	31.4	8,572	3,550	41.4	8,363	5,426	64.9	7,126	2,773	38.9	227,297	126,709	55.7
1987	290,532	148,877	51.2	63,018	21.7	19,538	31.0	5,638	1,413	25.1	22,281	2,841	12.8	11,808	3,797	32.2	8,831	3,651	41.3	8,165	5,327	65.2	6,295	2,509	39.9	227,514	129,339	56.8
1988	300,091	154,688	51.5	63,897	21.3	19,481	30.5	5,650	1,379	24.4	22,891	2,854	12.5	12,600	3,841	30.5	8,559	3,548	41.5	7,925	5,326	67.2	6,272	2,533	40.4	236,194	154,667	65.5
1989	309,762	160,780	51.9	64,873	20.9	20,158	31.1	5,684	1,518	26.7	23,713	3,080	13.0	12,816	3,989	31.1	7,726	3,364	43.5	8,579	5,780	67.4	6,355	2,427	38.2	244,889	160,759	65.6
1990	323,844	170,201	52.6	67,617	20.9	21,614	32.0	5,447	1,439	26.4	23,953	3,262	13.6	13,320	4,147	31.1	8,483	3,630	42.8	9,231	6,239	67.6	7,183	2,897	40.3	256,227	170,180	66.4
50–59	619,319	196,049	32.0	155,403	25.1	16,067	10.3	28,639	2,245	7.8	48,164	163	0.3	9,625	1,814	18.8	35,026	4,557	13.0	12,632	3,565	28.2	21,317	3,723	17.5	463,916	196,024	39.2
60–69	1,212,618	406,658	33.7	333,150	27.5	42,618	12.8	46,555	4,792	10.3	114,758	570	0.5	41,462	8,718	21.0	59,816	11,945	20.0	24,338	7,922	32.5	46,221	8,671	18.8	879,468	408,631	41.6
70–79	2,776,215	1,234,500	44.5	537,941	19.4	111,058	20.6	58,702	8,820	15.0	162,596	4,869	3.0	67,465	17,368	25.7	96,087	26,107	27.2	65,857	29,573	44.9	87,232	24,321	27.9	2,238,274	1,234,481	50.2
80–89	2,946,184	1,488,952	50.5	900,156	20.4	176,787	29.5	55,599	12,811	23.0	204,291	21,889	10.7	98,521	29,324	30.4	91,228	34,931	38.3	81,774	51,307	62.7	70,743	26,525	37.5	2,346,028	1,351,762	57.6
TOTAL	7,878,190	3,500,380	44.4	1,694,267	21.5	368,144	21.7	194,942	30,107	15.4	553,764	30,753	5.6	228,393	61,371	26.9	290,640	81,170	27.9	193,832	98,806	50.9	232,696	66,137	28.4	6,183,913	3,363,077	54.4

Source: Earned Degrees Conferred Series, 1960–1990, National Center for Education Statistics, Redefined by the National Science Foundation

TABLE 2-23

BACHELORS DEGREES BY SCIENCE AND ENGINEERING FIELD AND SEX, 1950 – 1990

	All Fields			Total S/E				Science/Engineering Fields																					
								Physical Sciences			Engineering			Math/Comp Sci			Bio/Agri Sci			Psychology			Social Sciences			All Other Fields		
Year	Total	Women	%W	Number	%T	Women	%W	Number	Women	%W	Number	Women	%W	Number	Women	%W	Number	Women	%W	Number	Women	%W	Number	Women	%W	Number	Women	%W
1950	394,999	136,386	35	120,037	31	19,382	16	16,067	2,016	13	37,906	146	0	11,437	3,125	27	24,141	4,491	19	8,111	3,326	41	23,383	6,259	27	273,952	120,023	44
1951	401,784	145,884	36	121,660	30	20,586	17	16,500	2,008	13	38,866	134	0	13,127	3,844	29	23,900	4,822	20	8,524	3,431	40	24,743	6,856	28	280,124	125,299	45
1952	420,465	156,470	38	127,469	30	23,485	18	15,994	2,148	14	34,736	126	0	14,810	4,255	29	25,200	5,470	22	9,636	3,821	40	27,392	7,666	28	293,016	134,985	46
1953	450,592	175,542	39	135,994	30	27,099	20	16,276	2,238	14	33,458	130	0	16,121	4,968	31	27,501	6,174	22	11,062	4,557	41	31,246	9,042	29	314,628	148,743	47
1954	502,104	202,291	40	153,361	31	32,473	21	17,527	2,450	14	35,226	159	0	18,677	5,995	32	31,811	7,213	23	13,359	5,516	41	36,961	11,140	30	348,743	169,818	49
1955	536,900	219,290	41	164,936	31	36,213	22	17,916	2,532	14	36,796	139	0	19,886	6,453	33	34,842	8,277	24	14,721	6,033	41	40,894	12,779	31	373,964	183,047	49
1956	565,813	234,491	40	173,471	31	39,482	23	17,186	2,333	14	36,815	148	0	20,152	6,702	33	36,864	8,484	23	17,022	6,961	41	46,402	14,868	32	392,142	186,009	48
1957	594,862	239,582	40	187,849	32	44,002	23	17,794	2,402	13	38,188	184	1	21,530	7,334	34	39,406	8,948	23	19,496	7,906	40	53,433	17,328	32	407,013	195,580	48
1958	671,561	278,781	42	212,174	32	53,483	25	19,442	2,674	14	37,614	211	1	24,084	8,841	37	43,260	10,091	23	23,972	10,144	42	63,802	21,502	34	459,417	225,299	49
1959	709,663	302,750	42	244,519	32	63,196	26	21,591	2,962	14	41,563	313	1	28,263	10,348	37	48,713	11,308	23	29,495	12,719	43	74,904	25,586	34	525,164	259,554	49
1970	833,322	346,373	42	284,122	32	66,878	26	21,551	2,969	14	44,772	338	1	29,109	10,516	36	52,129	11,875	23	33,954	14,741	44	92,707	26,436	34	599,200	277,495	49
1971	864,366	370,166	42	271,178	31	72,996	27	21,549	3,014	14	45,367	365	1	27,306	9,918	36	51,461	11,903	23	36,154	17,037	45	87,319	30,969	35	593,210	297,170	49
1972	887,884	393,232	42	281,226	30	77,671	28	20,887	3,149	15	46,003	501	1	27,250	9,784	36	53,484	12,894	24	43,421	20,184	46	90,183	31,360	35	606,656	316,981	48
1973	900,707	412,346	42	286,391	30	83,839	29	20,909	3,121	15	46,989	580	1	27,526	9,985	36	59,486	14,570	24	48,096	22,966	48	92,493	32,897	35	614,316	328,507	48
1974	1,008,864	426,643	43	305,082	30	91,793	30	21,287	3,538	17	43,530	706	2	26,570	9,719	37	68,226	17,836	26	52,258	26,407	51	93,193	33,589	36	703,782	337,050	48
1975	997,922	430,266	44	294,920	30	93,342	32	20,896	3,838	18	40,095	880	2	23,385	8,858	37	72,710	20,911	29	51,438	27,103	53	86,426	32,074	37	636,743	336,926	49
1976	987,504	436,745	44	292,174	29	96,597	33	21,559	4,139	19	39,114	1,443	4	21,749	7,878	36	77,301	23,789	31	50,363	27,378	54	82,088	31,172	38	642,299	340,148	48
1977	993,008	441,219	44	288,543	29	97,453	34	22,819	4,551	20	41,561	2,096	5	20,729	7,488	36	78,472	25,909	33	47,794	27,102	57	77,348	30,617	40	636,695	343,766	49
1978	987,166	453,546	46	286,167	29	100,060	35	23,175	4,967	22	47,411	3,497	7	19,925	7,110	36	77,136	26,954	35	45,067	26,540	59	75,481	30,972	41	642,090	353,486	55
1979	1,000,562	466,269	47	288,626	29	102,292	35	23,363	5,287	23	53,720	4,919	9	20,670	7,421	36	75,085	27,549	37	43,012	26,363	61	72,775	30,754	42	643,715	383,997	51
1980	940,251	482,501	49	291,983	29	105,874	36	23,661	5,651	24	59,240	6,014	10	22,896	8,247	36	71,617	27,586	39	42,513	26,923	63	72,266	31,543	44	648,268	368,827	52
1981	946,677	470,882	50	294,967	31	106,763	37	24175	5960	25	64,066	7,117	11	26,408	9,734	37	68,096	27,476	40	41,364	26,917	65	70,766	31,218	44	652,010	364,066	56
1982	964,043	484,812	50	302,118	31	111,473	37	24372	6339	26	67,791	8,337	12	32,139	12,173	38	65,041	26,926	41	41,539	27,793	67	71,236	31,603	44	661,925	373,339	56
1983	990,679	495,694	51	307,229	32	114,022	37	23497	6461	27	72,964	9,719	13	37,239	14,490	39	63,237	26,560	40	40,825	27,897	68	69,477	30,795	44	673,450	381,672	57
1984	968,345	498,937	50	314,666	32	115,356	37	23789	6591	28	76,531	10,833	14	45,777	17,990	39	59,813	25,360	43	40,375	27,426	68	68,811	29,826	43	671,679	381,579	57
1985	990,880	501,617	51	321,730	32	118,837	38	23647	6686	28	77,871	11,316	15	54,398	21,467	39	57,812	25,148	43	40,237	27,422	68	67,594	29,367	43	668,141	382,780	57
1986	1,000,262	507,555	51	323,960	32	120,566	38	21662	6060	27	77,091	11,203	14	56,583	22,742	39	56,485	24,822	44	40,937	28,246	69	69,042	29,994	43	676,402	386,969	57
1987	1,008,532	518,529	52	318,942	32	123,309	39	20155	5733	28	74,705	11,473	15	56,553	21,815	39	56,215	24,823	44	43,195	29,756	69	68,119	30,089	44	694,890	396,220	58
1988	1,008,033	534,797	52	308,780	31	122,088	40	17817	5433	30	70,406	10,840	15	51,018	18,813	37	54,290	24,549	45	45,378	31,794	70	69,981	30,660	44	697,275	402,708	58
1989	1,017,667	554,670	53	304,231	30	122,175	40	17204	5107	30	68,296	10,062	15	45,874	16,432	36	49,826	22,725	46	48,516	34,335	71	76,515	33,514	44	713,436	412,366	58
1990	1,048,867	557,109	53	308,166	29	127,166	41	16131	5040	31	64,077	9,829	15	42,031	15,041	36	50,240	22,960	46	53,586	38,295	71	82,103	36,002	44	741,489	430,003	58
80–89	9,437,992	1,109,454	32	1,042,479	30	154,756	15	129,394	14,979	12	324,364	573	0	56,535	15,901	29	248,672	37,971	13	97,429	29,054	42	217,085	57,019	26	2,366,214	964,096	40
90–99	5,300,535	2,166,696	40	1,642,340	31	368,370	22	175,183	23,751	14	366,058	1,886	0	157,699	61,655	39	336,749	75,258	22	156,460	64,334	41	423,260	132,696	31	3,056,193	1,747,328	46
70–79	9,621,114	4,177,997	43	2,899,406	30	863,921	31	217,994	36,560	19	449,572	15,296	3	244,221	98,175	36	695,492	193,489	29	453,443	236,999	52	630,966	312,583	37	5,432,416	3,294,076	49
80–89	10,868,316	5,565,663	51	3,306,653	31	1,297,752	39	236,460	66,063	28	771,000	106,742	14	472,994	178,734	38	852,432	279,745	43	479,466	326,534	68	795,562	344,601	44	7,488,883	4,267,311	57
TOTAL	39,280,218	13,999,379	45	9,299,047	31	2,812,997	30	774,592	147,424	19	1,973,071	134,424	7	1,002,180	369,906	36	1,952,576	909,423	31	1,296,922	663,080	57	2,240,018	882,671	39	30,716,975	16,983,992	55

Source: Earned Degrees Conferred Series, 1950–1990, National Center for Education Statistics, redefined by the National Science Foundation

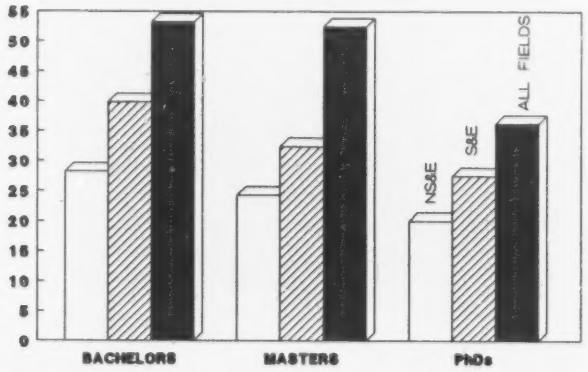
TABLE 2-24

BACHELORS DEGREE AWARDS, 1968 – 1990

	All Fields			S&E			NS&E		
Year	Number	Women	%W	Number	Women	%W	Number	Women	%W
1968	671,591	278,761	41.5	212,174	53,463	25.2	124,400	21,817	17.5
1969	769,683	322,750	41.9	244,519	63,196	25.8	140,120	24,921	17.8
1970	833,322	346,373	41.6	264,122	68,878	26.1	147,561	25,698	17.4
1971	884,386	370,166	41.9	271,176	72,996	26.9	145,703	25,000	17.2
1972	937,884	393,232	41.9	281,228	77,671	27.6	147,624	26,127	17.7
1973	980,707	412,346	42.0	295,391	83,839	28.4	154,812	28,256	18.3
1974	1,008,654	428,843	42.5	305,062	91,793	30.1	159,613	31,797	19.9
1975	987,922	430,268	43.6	294,920	93,342	31.6	157,056	34,165	21.8
1976	997,504	435,745	43.7	292,174	95,597	32.7	159,723	37,049	23.2
1977	993,008	441,219	44.4	288,543	97,453	33.8	163,400	39,734	24.3
1978	997,165	453,546	45.5	288,167	100,060	34.7	167,649	42,548	25.4
1979	1,000,562	466,259	46.6	288,625	102,292	35.4	172,838	45,175	26.1
1980	940,251	462,501	49.2	291,983	105,974	36.3	177,204	47,508	26.8
1981	946,877	470,882	49.7	294,867	106,783	36.7	182,735	48,648	26.6
1982	964,043	484,812	50.3	302,118	111,473	37.3	189,343	52,087	27.5
1983	980,679	495,694	50.5	307,229	114,022	37.3	196,927	55,640	28.3
1984	986,345	496,937	50.4	314,666	115,358	37.4	205,680	58,106	28.3
1985	990,880	501,617	50.6	321,739	118,837	37.6	213,918	62,028	29.0
1986	1,000,352	507,555	50.7	323,950	120,566	37.9	213,971	62,326	29.1
1987	1,003,532	518,529	51.7	318,942	123,309	38.7	207,628	63,444	30.6
1988	1,006,033	524,797	52.2	308,760	122,089	39.5	193,521	59,635	30.8
1989	1,017,667	534,570	52.5	304,321	122,175	40.1	179,200	54,326	30.3
1990	1,049,657	557,169	53.1	308,168	127,166	41.3	172,479	52,869	30.7

CHART 2-6

PERCENT WOMEN GRADUATES
1990



Source: NCES/NSF

Graph by CPST (105C 2)

SOURCE: U.S. Dept. of Ed., National Center for Education Statistics, "Degrees and Other Formal Awards Conferred, 1989–90" Survey

TABLE 2-25

BACHELORS, MASTERS AND DOCTORAL DEGREES CONFERRED BY SEX AND FIELD, 1989–90

Field of Study	Bachelors Degrees			Masters Degrees			Doctorate Degrees		
	Total	Women	% Wom	Total	Women	% Wom	Total	Women	% Wom
All Fields	1,049,657	557,169	53.1	323,844	170,201	52.6	38,238	13,867	36.3
Agribusiness & Ag Production	4,521	1,114	24.6	718	167	23.3	211	46	21.8
Agricultural Sciences	5,774	2,276	39.4	1,661	616	37.1	825	157	19.0
Ag Sciences, General	882	245	27.8	169	46	27.2	3	0	0.0
Animal Sciences	2,770	1,311	47.3	484	186	38.4	213	32	15.0
Food Sciences	528	269	50.9	301	190	63.1	122	44	36.1
Plant Sciences	1,399	387	27.7	579	158	27.3	379	66	17.4
Soil Sciences	97	26	26.8	88	20	22.7	80	8	10.0
Ag Sciences Other	98	38	38.8	40	16	40.0	28	7	25.0
Renewable Natural Resources	2,775	725	26.1	994	336	33.8	236	40	16.9
Forestry Production & Sciences	1,006	181	18.0	439	150	34.2	135	13	9.6
Wildlife Management	590	162	27.5	109	26	23.9	19	2	10.5
Renewable Nat Resources Other	1,179	382	32.4	446	160	35.9	82	25	30.5
Architecture & Envt Design	9,261	3,624	39.1	3,792	1,271	33.5	97	28	28.9
Architecture	4,571	1,198	26.2	1,759	532	30.2	22	6	27.3
Arch & Envt Design Other	4,690	2,426	51.7	2,033	739	36.4	75	22	29.3
Area and Ethnic Studies	4,399	2,639	60.0	1,198	542	45.2	128	60	46.9
Business & Mgt, & Office & Mark	249,081	116,377	46.7	77,203	26,220	34.0	1,142	279	24.4
Business Management, General	41,973	19,316	46.0	13,882	4,527	32.6	184	55	29.9
Accounting	43,990	23,359	53.1	3,265	1,450	44.4	60	26	43.3
Banking and Finance	26,030	8,616	33.1	5,305	1,526	28.8	48	5	10.4
Business Admin & Mgmt	69,596	31,699	45.5	39,573	13,024	32.9	562	122	21.7
Business Economics	3,639	1,224	33.6	172	48	27.9	32	3	9.4
Human Resources Development	2,224	1,206	54.2	1,037	298	28.7	11	7	63.6
Institutional Management	5,800	3,791	65.4	443	179	40.4	2	1	50.0
Labor/Industrial Relations	1,013	537	53.0	693	369	53.2	17	2	11.8
Management Info Systems	3,047	1,235	40.5	1,009	310	30.7	9	1	11.1
Management Sciences	2,564	1,026	40.0	1,182	279	23.6	60	10	16.7
Marketing Management & Research	30,260	15,192	50.2	2,362	1,130	47.8	51	17	33.3
Personnel Management	1,605	899	56.0	230	100	43.5	9	1	11.1
Business & Management, Other	17,340	8,277	47.7	8,050	2,980	37.0	97	29	29.9
Business & Office	2,587	2,032	78.5	34	12	35.3	0	0	
Marketing & Distribution	5,473	3,409	62.3	121	50	41.3	2	2	100.0
Communications	50,063	30,527	61.0	4,080	2,508	61.5	263	122	46.4
Advertising	2,778	1,792	64.5	227	156	68.7	1	0	0.0
Journalism	11,565	7,428	64.2	1,305	805	61.7	40	13	32.5
Public Relations	1,804	1,281	71.0	103	74	71.8	0	0	
Radio & TV	6,634	3,148	47.5	284	146	51.4	12	7	58.3
Communicatons, Other & General	27,282	16,878	61.9	2,161	1,327	61.4	210	102	48.6
Communications Technologies	1,220	565	46.3	299	149	49.8	6	3	50.0
Computer & Information Sciences	27,434	8,256	30.1	9,643	2,675	27.7	623	90	14.4
Comp & Info Sciences General	21,238	6,027	28.4	7,866	2,081	26.5	596	80	13.4
Computer Programming	484	90	18.6	124	25	20.2	0	0	
Data Processing	531	232	43.7	73	15	20.5	0	0	
Info Science & Systems	3,730	1,429	38.3	1,167	449	38.5	17	9	52.9
Comp & Info Sci Other	1,451	478	32.9	413	105	25.4	10	1	10.0
Education	104,715	81,735	78.1	86,057	65,223	75.8	6,922	3,991	57.7
Education, General	2,218	1,776	80.1	9,108	6,731	73.9	1,188	723	60.9
Bilingual/Bicultural Education	131	121	92.4	195	128	65.6	34	14	41.2
Curriculum and Instruction	529	508	96.0	5,199	4,234	81.4	725	461	63.6
Education Administraton	27	27	100.0	9,984	5,864	58.7	2,016	1,025	50.8
Special Education	6,625	6,155	92.9	9,033	7,950	88.0	213	156	73.2
Student Counseling/Personnel Svcs	48	39	81.3	10,473	8,113	77.5	416	250	60.1
Teacher Ed, General	58,972	53,598	90.9	19,859	16,945	85.3	402	261	64.9
Elementary Education	48,623	45,126	92.8	12,025	10,987	91.4	88	68	77.3
Junior High/Middle School Ed	869	715	82.3	551	480	87.1	0	0	
Pre–elementary Educaton	4,853	4,777	98.4	1,616	1,584	98.0	17	16	94.1
Secondary Education	4,074	2,518	61.8	3,659	2,436	66.6	80	50	62.5
Teacher Ed General, Other	553	462	83.5	2,008	1,458	72.6	217	127	58.5

TABLE 2-25 (continued)

BACHELORS, MASTERS AND DOCTORAL DEGREES CONFERRED BY SEX AND FIELD, 1989–90

Field of Study	Bachelors Degrees			Masters Degrees			Doctorate Degrees		
	Total	Women	% Wom	Total	Women	% Wom	Total	Women	% Wom
Education (continued)									
Teacher Ed, Specific	35,086	18,688	53.3	15,864	10,584	66.7	843	425	50.4
Agricultural Education	522	115	22.0	265	58	21.9	35	9	25.7
Art Education	1,151	933	81.1	533	445	83.5	38	25	65.8
Business Education	1,929	1,544	80.0	550	423	76.9	15	11	73.3
English Education	1,930	1,564	81.0	454	360	79.3	23	14	60.9
Health Education	1,661	1,218	73.3	808	608	75.2	109	75	68.8
Home Economics Education	467	463	99.1	199	195	98.0	7	7	100.0
Industrial Arts Education	1,920	236	12.3	602	124	20.6	35	15	42.9
Mathematics Education	1,725	1,080	62.6	777	534	68.7	40	17	42.5
Music Education	2,875	1,718	59.8	897	520	58.0	72	33	45.8
Physical Education	12,919	5,915	45.8	3,482	1,771	50.9	200	76	38.0
Reading Education	222	201	90.5	3,536	3,379	95.6	75	60	80.0
Science Education	1,514	841	55.5	783	453	57.9	48	20	41.7
Social Science Education	782	395	50.5	163	114	69.9	2	1	50.0
Social Studies Education	1,719	703	40.9	212	85	40.1	5	2	40.0
Trade & Industrial Education	1,348	385	28.6	524	242	46.2	56	22	39.3
Teacher Ed Specific, Other	2,402	1,377	57.3	2,079	1,273	61.2	83	38	45.8
Education, Other	863	636	73.7	2,875	2,093	72.8	303	185	61.1
Engineering	64,077	9,828	15.3	23,953	3,262	13.6	4,953	434	8.8
Engineering, General	2,566	417	16.3	1,116	141	12.6	242	14	5.8
Aerospace, Aeronaut & Astronaut	3,048	343	11.3	1,029	82	8.0	178	3	1.7
Agricultural Engineering	467	61	13.1	186	23	12.4	78	6	7.7
Architectural Engineering	530	91	17.2	34	0	0.0	0	0	
Bio & Biomedical	701	222	31.7	364	117	32.1	112	20	17.9
Cereamic Engineering	349	75	21.5	90	21	23.3	42	10	23.8
Chemical Engineering	3,450	1,035	30.0	1,030	182	17.7	564	74	13.1
Civil Engineering	7,273	1,112	15.3	3,834	413	10.8	513	47	9.2
Computer Engineering	1,903	249	13.1	783	138	17.6	86	11	12.8
Elec/Electronic, Comm. Eng	20,892	2,576	12.3	7,218	851	11.8	1,169	84	7.2
Engineering Machenics	146	13	8.9	184	29	15.8	91	7	7.7
Engineering Physics	328	46	14.0	73	8	11.0	33	2	6.1
Emgineering Scinece	223	37	16.6	305	40	13.1	73	7	9.6
Environ Health engineering	111	47	42.3	351	107	30.5	37	9	24.3
Geological & Geophysical Eng	83	20	24.1	51	8	15.7	9	2	22.2
Industrial Engineering	3,915	1,157	29.6	1,834	341	18.6	191	36	18.8
Materials Engineering	446	128	28.7	482	97	20.1	261	28	10.7
Mechanical Engineering	14,438	1,690	11.7	3,443	324	9.4	754	36	4.8
Metallurigical Engineeing	369	68	18.4	210	33	15.7	104	8	7.7
Mining & Mineral Engineering	88	5	5.7	57	3	5.3	30	1	3.3
Naval Arch & Marine Engineering	316	14	4.4	45	1	2.2	6	2	33.3
Nuclear Engineering	258	33	12.8	243	30	12.3	111	8	7.2
Ocean Engineering	82	12	14.6	94	10	10.6	17	2	11.8
Petroleum Engineering	307	24	7.8	165	9	5.5	54	0	0.0
Surveying & Mapping Sciences	97	20	20.6	26	3	11.5	2	0	0.0
Systems Engineering	327	69	21.1	314	50	15.9	25	0	0.0
Textile Engineering	37	21	56.8	22	6	27.3	1	0	
Engineering, Other	1,328	243	18.3	1,370	195	14.2	170	17	10.0
Engineering & Related Technologies	18,033	1,475	8.2	895	157	17.5	12	0	0.0
Electrical & Electronic Tech	4,580	296	6.5	46	9	19.6	0	0	
Industrial Production Technology	4,626	454	9.8	196	32	16.3	4	0	
Mechanical & Related Technologies	2,556	137	5.4	0	0		0	0	
Technologies, Other	6,271	588	9.4	653	116	17.8	8	0	
Foreign Languages	11,326	8,316	73.4	1,995	1,368	68.6	512	302	59.0
Baltic–Slavic	606	340	56.1	105	59	56.2	19	12	63.2
Germanic	1,469	966	65.8	278	175	62.9	70	42	60.0
Italic	7,774	6,044	77.7	1,166	845	221.0	279	185	66.3
Other Foreign Languages	1,477	966	65.4	446	289	64.8	144	63	43.8
Allied Health	12,570	9,946	79.1	3,646	2,740	75.2	105	53	50.5
Medical Lab Technologies	1,772	1,341	75.7	31	23	74.2	0	0	
Mental Health/Human Services	973	802	82.4	1,289	939	72.8	73	39	53.4
Rehabilitative Services	6,678	5,465	81.8	1,788	1,436	80.3	14	7	50.0
Allied Health, Other	3,147	2,338	74.3	538	342	63.6	18	7	38.9

TABLE 2-25 (continued)

BACHELORS, MASTERS AND DOCTORAL DEGREES CONFERRED BY SEX AND FIELD, 1989–90

Field of Study	Bachelors Degrees			Masters Degrees			Doctorate Degrees		
	Total	Women	% Wom	Total	Women	% Wom	Total	Women	% Wom
Health Sciences	46,246	39,635	85.7	16,708	13,080	78.3	1,438	793	55.1
Audiology & Speech Pathology	2,823	2,684	95.1	2,901	2,769	95.4	92	69	75.0
Health Services Administration	3,220	2,562	79.6	2,978	1,981	66.5	29	17	58.6
Medical Laboratory	603	488	80.9	49	34	69.4	1	1	100.0
Nursing	28,896	27,184	94.1	6,724	6,170	91.8	333	302	90.7
Pharmacy	5,995	3,577	59.7	287	137	47.7	167	59	35.3
Health Sciences, Other	4,709	3,140	66.7	3,769	1,989	52.8	816	345	42.3
Home Econ & Vocational Home Ec	14,987	13,507	90.1	2,153	1,843	85.6	303	214	70.6
Law	1,572	1,072	68.2	1,869	558	29.9	113	23	20.4
Letters	48,075	32,201	67.0	7,226	4,765	65.9	1,266	700	55.3
English, General	34,135	23,310	68.3	4,524	3,012	66.6	765	425	55.6
Linguistics	524	375	71.6	601	378	62.9	152	84	55.3
Literature, English	1,641	1,093	66.6	267	183	68.5	66	42	63.6
Speech, Debate & Forensics	8,425	5,302	557.0	564	391	107.0	102	48	47.1
Letters, Other	3,350	2,121	63.3	1,270	801	63.1	181	101	55.8
Liberal/General Studies	24,956	14,540	58.3	1,594	1,040	65.2	31	18	58.1
Library & Archival Sciences	84	68	81.0	4,349	3,389	77.9	41	29	70.7
Life Sciences	37,170	18,845	50.7	4,861	2,484	51.1	3,844	1,449	37.7
Biology, General	27,083	13,989	51.7	1,969	1,010	51.3	547	217	39.7
Biochemistry & Biophysics	2,022	892	44.1	293	124	42.3	582	195	33.5
Botany	229	113	49.3	273	128	46.9	297	97	32.7
Cell and Molecular Biology	746	308	41.3	99	51	51.5	252	96	38.1
Microbiology	1,832	1,001	54.6	355	195	54.9	404	160	39.6
Zoology	2,692	1,331	49.4	743	296	39.8	962	341	35.4
Life Sciences, Other	2,566	1,211	47.2	1,129	680	60.2	800	343	42.9
Mathematics	14,597	6,785	46.5	3,677	1,472	40.0	915	169	18.5
Military Science & Technololgy	417	33	7.9	0	0		0	0	
Multi–Interdisciplinary Studies	19,188	10,435	54.4	3,505	1,482	42.3	311	108	34.7
Parks & Recreation	4,404	2,463	55.9	430	251	58.4	35	17	48.6
Philosophy and Religion	6,848	2,474	36.1	1,326	487	36.7	432	108	25.0
Theology	5,162	1,243	24.1	4,686	1,688	36.0	1,298	151	11.6
Physical Sciences	16,131	5,040	31.2	5,447	1,439	26.4	4,168	804	19.3
Astronomy	103	33	32.0	89	19	21.3	67	13	19.4
Astrophysics	37	10	27.0	13	2	15.4	22	3	13.6
Atmospheric Sci & Meterology	360	74	20.6	198	24	12.1	65	12	18.5
Chemistry	8,126	3,233	39.8	1,696	644	38.0	2,183	536	24.6
Geological Sciences	1,818	525	28.9	1,207	290	24.0	399	66	16.5
Oceanography	160	45	28.1	82	29	35.4	82	23	28.0
Earth Science	435	131	30.1	109	35	32.1	51	13	25.5
Physics	4,182	678	16.2	1,815	296	16.3	1,192	122	10.2
Physical Sciences, Other	910	311	34.2	238	100	42.0	107	16	15.0
Science Technologies	113	41	36.3	57	19	33.3	9	0	0.0
Protective Services	15,387	2,512	37.4	1,151	355	30.8	37	13	35.1
Psychology	53,586	38,295	71.5	9,231	6,239	67.6	3,353	1,939	57.8
Public Affairs	16,241	10,931	67.3	17,993	11,812	65.6	495	266	53.7
Social Sciences	116,925	51,677	44.2	11,419	4,661	40.8	3,023	986	32.6
Anthropology	3,597	2,291	63.7	791	462	58.4	319	166	52.0
Archeology	87	54	62.1	36	19	52.8	13	9	69.2
Criminology	1,294	523	40.4	68	30	44.1	3	3	100.0
Economics	23,899	7,453	31.2	1,965	499	25.4	822	169	20.6
Geography	3,197	974	30.5	548	206	37.6	144	35	24.3
History	22,232	8,330	37.5	2,342	895	38.2	570	186	32.6
International Relations	4,592	2,707	59.0	1,535	614	40.0	87	18	20.7
Politicaal Science & Govt	33,235	13,549	40.8	1,554	505	32.5	477	122	25.6
Sociology	15,929	10,901	68.4	1,179	696	59.0	436	207	47.5
Social Sciences, Other	8,863	4,895	55.2	1,401	735	52.5	152	71	46.7
Visual and Performing Arts	39,695	24,370	61.4	8,546	4,797	56.1	842	370	43.9
Design	5,015	2,956	58.9	313	185	59.1	0	0	
Dramatic Arts	4,719	2,838	60.1	1,176	592	50.3	88	43	48.9
Film Arts	1584	646	40.8	259	107	41.3	5	3	60.0
Fine Arts	17,120	11,555	67.5	2,969	1,870	63.0	149	105	70.5
Music	6,917	3,487	50.4	3,260	1,669	51.2	583	209	35.8
Visual & Performing Arts, Other	4,340	2,888	66.5	569	374	65.7	17	10	58.8

SOURCE: U.S. Dept. of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred, 1989–90 Survey

TABLE 2-26

EARNED DEGREES CONFERRED BY LEVEL AND SEX, 1989–90

FIELD	Bachelors Degrees				Masters Degrees				Doctors Degrees			
	Total	Women	Men	%Wo	Total	Women	Men	%W	Total	Women	Men	%W
ALL FIELDS	1,046,932	556,831	490,101	53.2	321,992	169,085	152,907	53	37,980	13,762	24,218	36.2
Agriculture & Nat Resources	13,070	4,115	8,955	31.5	3,373	1,128	2,245	33	1,272	243	1,029	19.1
Architecture & Env. Design	9,261	3,624	5,637	39.1	3,492	1,271	2,221	36	97	28	69	28.9
Area & Ethnic Studies	4,399	2,639	1,760	60.0	1,198	542	656	45	128	60	68	46.9
Business & Management	249,081	116,377	132,704	46.7	77,203	26,220	50,983	34	1,142	279	863	24.4
Communications	51,283	31,092	20,191	60.6	4,369	2,657	1,712	61	269	125	144	46.5
Computer & Info Sciences	27,436	8,258	19,178	30.1	9,643	2,675	6,968	28	623	90	533	14.4
Education	104,715	81,735	22,980	78.1	86,057	65,223	20,834	76	6,922	3,991	2,931	57.7
Engineering & Rel. Techs.	82,110	11,303	70,807	13.8	24,848	3,419	21,429	14	4,965	434	4,531	8.7
Fine & Applied Arts	39,695	24,370	15,325	61.4	8,546	4,797	3,749	56	842	370	472	43.9
Foreign Languages	11,326	8,316	3,010	73.4	1,995	1,368	627	69	512	302	210	59.0
Health Professions	58,816	49,581	9,235	84.3	20,354	15,820	4,534	78	1,543	846	697	54.8
Home Economics	14,987	13,507	1,480	90.1	2,153	1,843	310	86	303	214	89	70.6
Law	1,582	1,072	510	67.8	1,869	558	1,311	30	113	23	90	20.4
Letters	54,923	34,675	20,248	63.1	8,549	5,252	3,297	61	1,698	808	890	47.6
Library Science	84	68	16	81.0	4,349	3,389	960	78	41	29	12	70.7
Life Sciences	37,170	18,845	18,325	50.7	4,861	2,484	2,377	51	3,844	1,449	2,395	37.7
Mathematics	14,597	6,785	7,812	46.5	3,677	1,472	2,205	40	915	169	746	18.5
Military Sciences	417	33	384	7.9	0	0	0		0	0	0	
Physical Sciences	16,131	5,040	11,091	31.2	5,447	1,439	4,008	26	4,168	804	3,364	19.3
Psychology	53,586	38,295	15,291	71.5	9,231	6,239	2,992	68	3,353	1,939	1,414	57.8
Public Affairs & Services	36,032	19,206	16,826	53.3	19,574	12,418	7,156	63	567	296	271	52.2
Social Sciences	116,925	51,677	65,248	44.2	11,419	4,661	6,758	41	3,023	986	2,037	32.6
Theology	5,162	1,243	3,919	24.1	4,686	1,688	2,998	36	1,298	151	1,147	11.6
Interdisciplinary Studies	44,144	24,975	19,169	56.6	5,099	2,522	2,577	49	342	126	216	36.8

Source: Degrees and Other Formal Awards Conferred, 1989–90 Survey, National Center for Education Statistics

TABLE 2-27

DOCTOR'S DEGREES AWARDED BY FIELD, SEX & RACE/ETHNICITY 1989–90

					White			Black			Hispanic			Asian			Indian			Foreign		
FIELD	TOTAL	Women	Men	%W	Women	Men	%Wh	Wom	Men	%Bl	Wom	Men	%H	Wom	Men	%A	Wom	Men	%I	Wom	Men	%F
ALL FIELDS	37980	13762	24218	36.2	10691	15102	67.9	612	533	3.0	366	417	2.1	372	910	3.4	50	52	0.3	1671	7204	23.4
Agriculture & Nat Resources	1272	243	1029	19.1	150	551	55.1	3	20	1.8	3	12	1.2	11	22	2.6	0	0	0.0	76	424	39.3
Architecture & Env. Design	97	28	69	28.9	16	25	42.3	3	0	3.1	1	1	2.1	0	3	3.1	0	0	0.0	8	40	49.5
Area & Ethnic Studies	128	60	68	46.9	44	52	75.0	0	4	3.1	4	3	5.5	5	2	5.5	2	0	1.6	5	7	9.4
Business & Management	1142	279	863	24.4	223	440	58.1	3	15	1.6	2	7	0.8	7	51	5.1	1	2	0.3	43	348	34.2
Communications	269	125	144	46.5	89	102	71.0	12	3	5.6	2	2	1.5	1	4	1.9	1	0	0.4	20	33	19.7
Computer & Info Sciences	623	90	533	14.4	71	240	49.9	1	3	0.6	1	1	0.3	1	28	4.7	0	1	0.2	16	260	44.3
Education	6922	3991	2931	57.7	3240	2260	79.5	341	177	7.5	86	75	2.3	57	38	1.4	22	16	0.5	245	365	8.8
Engineering & Rel. Techs.	4965	434	4531	8.7	258	1817	41.8	7	27	0.7	6	38	0.9	29	287	6.4	0	5	0.1	134	2357	50.2
Fine & Applied Arts	842	370	472	43.9	304	403	84.0	7	12	2.3	5	3	1.0	13	9	2.6	1	1	0.2	40	44	10.0
Foreign Languages	512	302	210	59.0	193	130	63.1	2	0	0.4	48	18	12.9	6	2	1.6	0	1	0.2	53	59	21.9
Health Professions	1543	846	697	54.8	668	463	73.3	20	19	2.5	22	12	2.2	26	37	4.1	8	1	0.6	102	165	17.3
Home Economics	303	214	89	70.6	164	66	75.9	11	4	5.0	0	0	0.0	4	2	2.0	2	0	0.7	33	17	16.5
Law	113	23	90	20.4	2	31	29.2	0	0	0.0	4	1	4.4	0	1	0.9	0	0	0.0	17	57	65.5
Letters	1698	808	890	47.6	662	704	80.4	19	10	1.7	20	17	2.2	19	22	2.4	1	3	0.2	87	134	13.0
Library Science	41	29	12	70.7	21	6	65.9	2	0	4.9	2	1	7.3	1	0	2.4	0	0	0.0	3	5	19.5
Life Sciences	3844	1449	2395	37.7	1086	1720	73.0	20	24	1.1	31	41	1.9	68	98	4.3	0	4	0.1	244	508	19.8
Mathematics	915	169	746	18.5	77	321	43.5	2	5	0.8	1	4	0.5	11	30	4.5	0	0	0.0	78	388	50.7
Military Sciences	0	0	0		0	0		0	0		0	0		0	0		0	0		0	0	
Physical Sciences	4168	804	3364	19.3	512	2080	62.2	10	18	0.7	17	61	1.9	34	123	3.8	0	5	0.1	231	1077	31.4
Psychology	3353	1939	1414	57.8	1694	1215	86.8	79	38	3.5	65	59	3.7	29	33	1.8	9	8	0.5	63	61	3.7
Public Affairs & Services	567	296	271	52.2	249	166	73.2	18	16	6.0	8	7	2.6	10	8	3.2	0	0	0.0	11	74	15.0
Social Sciences	3023	986	2037	32.6	732	1250	65.6	38	75	3.7	35	38	2.4	33	62	3.1	3	2	0.2	145	610	25.0
Theology	1298	151	1147	11.6	131	916	80.7	7	57	4.9	1	12	1.0	4	39	3.3	0	3	0.2	8	120	9.9
Interdisciplinary Studies	342	126	216	36.8	105	144	72.8	7	6	3.8	2	4	1.8	3	9	3.5	0	0	0.0	9	53	18.1

Source: Degrees and Other Formal Awards Conferred, 1989–90 Survey, National Center for Education Statistics

TABLE 2-28

MASTERS DEGREES AWARDED BY FIELD, SEX & RACE/ETHNICITY 1989–90

					White			Black			Hispanic			Asian			Indian			Foreign		
FIELD	TOTAL	Women	Men	%W	Women	Men	%W	Wom	Men	%B	Wom	Men	%H	Wom	Men	%A	Wom	Men	%I	Wom	Men	%F
ALL FIELDS	321992	169085	152907	52.5	138542	112976	78.1	9839	5462	4.75	4339	3566	2.45	4576	6070	3.30	643	465	0.3	11146	24348	11.0
Agriculture & Nat Resources	3373	1128	2245	33.4	819	1499	68.7	14	36	1.48	20	26	1.36	29	30	1.74	4	7	0.3	242	647	26.3
Architecture & Env. Design	3492	1271	2221	36.3	900	1514	69.1	53	59	3.20	33	70	2.94	50	78	3.66	7	0	0.2	228	500	20.8
Area & Ethnic Studies	1196	542	656	45.2	374	489	72.0	24	18	3.50	25	26	4.25	31	25	4.67	5	4	0.7	83	94	14.7
Business & Management	77203	26220	50983	33.9	20661	40334	79.0	1539	1805	4.33	592	1039	2.11	1102	1902	3.89	61	132	0.2	2265	5771	10.4
Communications	4369	2657	1712	60.8	2067	1300	77.0	156	79	5.37	44	38	1.87	95	60	3.54	6	4	0.2	289	231	11.9
Computer & Info Sciences	9643	2675	6968	27.7	1511	3926	56.3	101	158	2.68	28	105	1.37	364	688	10.9	2	6	0.0	669	2085	28.5
Education	86057	65223	20834	75.7	56229	17315	85.4	4414	1171	6.48	1836	699	2.94	769	254	1.18	299	106	0.4	1676	1269	3.44
Engineering & Rel. Techs.	24848	3419	21429	13.7	2167	12170	57.6	115	332	1.79	72	377	1.80	330	1682	8.09	9	33	0.1	726	6835	30.4
Fine & Applied Arts	8543	4797	3749	56.1	3875	3010	80.5	117	129	2.87	88	100	2.19	174	90	3.08	20	15	0.4	523	405	10.8
Foreign Languages	1995	1368	627	68.5	920	413	66.8	17	13	1.50	130	53	9.17	30	12	2.10	2	1	0.1	269	135	20.2
Health Professions	20354	15820	4534	77.7	13605	3542	84.2	763	169	4.57	330	123	2.22	439	194	3.10	62	21	0.4	621	485	5.43
Home Economics	2153	1843	310	85.6	1545	238	82.8	95	10	4.87	31	4	1.62	44	6	2.32	5	1	0.2	123	51	8.06
Law	1869	558	1311	29.8	311	778	58.2	14	28	2.24	14	22	1.92	14	14	1.49	0	1	0.0	205	468	36.0
Letters	8549	5252	3297	61.4	4406	2647	82.5	123	56	2.09	134	88	2.59	120	64	2.15	19	13	0.3	450	429	10.2
Library Science	4349	3389	960	77.9	2978	819	87.3	138	34	3.95	33	21	1.24	72	21	2.13	14	3	0.3	154	62	4.96
Life Sciences	4861	2484	2377	51.1	1883	1785	75.4	62	53	2.36	45	49	1.93	135	101	4.85	6	8	0.2	353	381	15.0
Mathematics	3677	1472	2205	40.0	944	1351	62.4	35	39	2.01	15	32	1.27	82	112	5.27	2	4	0.1	394	667	28.8
Military Sciences	0	0	0		0	0		0	0		0	0		0	0		0	0		0	0	
Physical Sciences	5447	1439	4008	26.4	936	2675	66.2	27	34	1.11	26	55	1.48	99	150	4.57	3	6	0.1	348	1058	25.8
Psychology	9231	6239	2992	67.5	5286	2552	84.9	353	139	5.32	201	105	3.31	122	44	1.79	25	14	0.4	252	138	4.22
Public Affairs & Services	19574	12418	7156	63.4	10145	5455	79.6	1301	691	10.1	416	258	3.44	232	145	1.92	49	43	0.4	275	564	4.28
Social Sciences	11419	4661	6758	40.8	3381	4618	70.0	227	220	3.91	130	154	2.48	158	214	3.25	34	26	0.5	731	1536	19.8
Theology	4686	1688	2998	36.0	1413	2362	80.5	64	118	3.88	23	55	1.66	44	115	3.39	3	11	0.2	141	337	10.2
Interdiciplinary Studies	5099	2522	2577	49.4	2186	2184	85.7	87	71	3.09	73	67	2.74	41	69	2.15	6	6	0.2	129	180	6.06

Source: Degrees and Other Formal Awards Conferred, 1989–90 Survey, National Center for Education Statistics

TABLE 2-29

BACHELOR'S DEGREES AWARDED BY FIELD, SEX & RACE/ETHNICITY 1989–90

					White			Black			Hispanic			Asian			Indian			Foreign		
FIELD	TOTAL	Women	Men	%Wo	Women	Men	%Wh	Wom	Men	%Bl	Wom	Men	%H	Wom	Men	%A	Wom	Men	%I	Wom	Men	%F
ALL FIELDS	1046932	556831	490101	53.2	469827	413469	84.3	37798	23276	5.83	17815	14871	3.12	19442	19617	3.73	2510	1828	0.41	9737	17040	2.55
Agriculture & Nat Resources	13070	4115	8955	31.5	3715	8119	90.5	122	200	2.46	65	148	1.61	110	138	1.89	27	49	0.58	76	303	2.89
Architecture & Env. Design	9261	3624	5637	39.1	3309	4554	84.9	106	205	3.35	120	247	3.96	183	289	5.09	9	16	0.26	197	326	5.64
Area & Ethnic Studies	4399	2639	1760	60.0	1997	1403	77.2	199	128	7.43	131	82	4.84	220	81	6.84	15	13	0.63	77	53	2.95
Business & Management	249081	116377	132704	46.7	95331	114068	84.0	9413	6313	6.31	3601	3581	2.88	4683	3643	3.34	435	392	0.33	2914	4707	3.05
Communications	51283	31092	20191	60.6	26804	17836	87.0	2319	1177	6.81	861	480	2.61	623	312	1.82	102	75	0.34	383	311	1.35
Computer & Info Sciences	27436	8258	19178	30.1	5209	14564	72.0	1236	1119	8.58	314	548	3.14	852	1392	8.17	31	56	0.31	614	1499	7.70
Education	104715	81735	22980	78.1	74829	20438	90.9	3200	1189	4.19	2210	643	2.72	687	264	0.88	441	157	0.57	388	289	0.64
Engineering & Rel. Techs.	82110	11303	70807	13.8	8208	55256	77.2	879	2393	3.98	385	2205	3.15	1275	5647	8.43	29	188	0.26	527	5118	6.87
Fine & Applied Arts	39695	24370	15325	61.4	21429	13221	87.2	741	675	3.56	581	478	2.66	892	485	3.46	95	68	0.41	632	398	2.59
Foreign Languages	11326	8316	3010	73.4	6698	2468	80.9	256	78	2.94	835	296	9.98	290	87	3.32	23	6	0.25	214	75	2.55
Health Professions	58816	49581	9235	84.3	42348	7717	85.1	3677	515	7.12	1292	318	2.73	1479	403	3.19	225	38	0.44	560	244	1.36
Home Economics	14987	13507	1480	90.1	11820	1254	87.2	823	112	6.23	260	43	2.02	369	41	2.73	65	1	0.44	170	29	1.32
Law	1582	1072	510	67.8	944	434	87.1	73	31	6.57	25	25	3.16	23	11	2.14	3	7	0.63	4	2	0.37
Letters	54923	34675	20248	63.1	30861	18219	89.3	1564	699	4.12	899	536	2.61	872	510	2.51	148	78	0.41	331	206	0.97
Library Science	84	68	16	81.0	63	13	90.4	2	1	3.57	0	0		0	1	1.19	0	0		3	1	4.76
Life Sciences	37170	18845	18325	50.7	14656	14863	79.4	1365	672	5.48	618	670	3.46	1709	1613	8.93	59	74	0.35	438	433	2.34
Mathematics	14597	6785	7812	46.5	5641	6406	82.5	385	349	5.02	145	207	2.41	392	501	6.11	23	24	0.32	199	325	3.58
Military Sciences	417	33	384	7.9	24	339	87.0	5	19	5.75	2	8	2.39	1	4	1.19	0	0		1	14	3.59
Physical Sciences	16131	5040	11091	31.2	3997	9478	83.5	368	304	4.16	121	228	2.16	353	607	5.95	21	53	0.45	180	421	3.72
Psychology	53586	38295	15291	71.5	32700	13122	85.5	2442	825	6.09	1461	607	3.85	1173	505	3.13	148	70	0.40	371	162	0.99
Public Affairs & Services	36032	19206	16826	53.3	15085	13947	80.5	2703	1703	12.2	828	658	4.12	275	241	1.43	174	96	0.74	141	181	0.89
Social Sciences	116925	51677	65248	44.2	42265	56153	84.1	4028	3120	6.11	1959	2122	3.49	2172	2143	3.69	258	255	0.43	995	1455	2.09
Theology	5162	1243	3919	24.1	1073	3469	88.0	68	174	4.68	16	80	1.85	38	84	2.36	7	5	0.23	36	107	2.77
Interdisciplinary Studies	44144	24975	19169	56.6	20816	16128	83.6	1824	1275	7.02	1086	663	3.96	791	615	3.18	172	107	0.63	286	381	1.51

Source: Degrees and Other Formal Awards Conferred, 1984–85 Survey, Office of Civil Rights and 1986–87 thru 1989–90 Surveys, National Center for Education Statistics

TABLE 2-30

PERCENT WOMEN AMONG S/E DOCTORATE GRADUATES BY RACE/ETHNICITY, 1985 – 1990

	Agri-culture & Nat Resour-ces	Com-puter & Info Sci-ences	Engin-eering	Life Sci-ences	Math-ematics	Phys-ical Sci-ences	SUB-TOTAL NAT-URAL S&E	Psy-chol-ogy	Social Sci-ences	SUB-TOTAL	TOTAL S&E	ALL FIELDS
All Women												
1985	14.0	10.1	6.4	32.7	15.6	16.3	18.1	48.8	32.2	40.6	25.5	34.1
1987	16.9	13.9	6.9	34.9	17.3	17.2	18.7	53.3	30.5	42.2	26.1	35.2
1989	19.6	15.1	8.8	36.7	19.4	19.7	20.3	56.2	32.6	45.2	27.7	36.5
1990	19.1	14.4	8.7	37.7	18.5	19.3	20.2	57.8	32.6	45.9	27.6	36.2
White												
1985	16.7	12.1	7.9	32.1	19.2	16.4	20.8	48.9	35.8	43.1	29.0	37.4
1987	19.1	18.7	10.2	35.1	18.3	18.7	22.3	52.7	35.3	45.2	30.9	39.4
1989	23.3	18.2	13.4	37.3	22.3	20.9	24.6	56.1	37.5	48.7	33.3	41.5
1990	21.4	22.8	12.4	38.7	19.3	19.8	24.2	58.2	36.9	49.6	33.3	41.4
Black												
1985	10.0		14.7	38.5		25.9	24.8	55.0	40.6	48.0	38.6	51.8
1987	27.8		10.3	43.4		15.4	27.0	63.9	40.0	52.1	41.6	54.0
1989	20.0		10.0	39.7		18.8	27.6	64.6	42.6	53.8	43.4	53.6
1990	20.0		13.6	43.1		21.8	27.3	52.4	47.9	50.8	38.5	46.7
Hispanic												
1985	8.3			43.1		13.9	18.8	52.2	30.2	39.4	25.7	36.3
1987	20.0			39.0		28.3	22.6	67.6	26.5	47.5	32.3	41.5
1989	15.0		14.0	23.4		20.4	20.6	58.4	40.0	51.0	34.6	43.7
1990	13.0		20.6	45.5		35.7	30.7	67.5	33.6	50.9	43.2	53.4
Indian												
1985							30.8	33.3			40.0	51.8
1987							6.7	62.5			37.1	44.2
1989						30.8	33.3	62.5			35.6	41.7
1990								52.9	60.0		32.4	49.0
Under Represented Minorities												
1985	8.7		5.8	41.3	21.4	19.7	21.4	53.7	37.4	45.2	32.4	46.4
1987	22.9	22.2	6.0	40.2	15.8	23.6	23.6	65.2	34.7	50.7	36.8	48.5
1989	17.1	83.3	11.8	33.0	37.5	21.2	24.5	61.9	40.4	52.1	39.0	49.6
1990	15.8	28.6	15.7	42.5	25.0	24.3	27.5	59.3	39.8	51.0	40.4	50.6
Asian												
1985	13.5	7.7	7.6	37.3	14.3	25.8	19.1	51.2	32.8	40.6	22.1	27.1
1987	12.5	20.0	7.0	44.3	35.1	22.3	21.5	56.9	23.4	36.7	23.9	27.5
1989	26.7	11.9	8.0	45.4	27.3	19.5	20.6	57.4	32.7	42.0	24.3	28.6
1990	33.3	3.4	9.2	41.0	26.8	21.7	20.8	46.8	34.7	39.5	24.0	29.0
All Minorities												
1985	11.7	5.3	7.0	39.3	17.5	24.0	19.9	53.1	36.2	44.1	27.1	39.3
1987	17.9	20.7	6.7	42.5	28.6	22.7	22.2	63.4	31.1	47.0	30.1	40.9
1989	21.5	20.8	8.7	40.5	30.6	20.1	21.8	60.9	37.6	49.1	30.7	40.6
1990	23.9	8.3	10.5	41.6	26.4	22.8	23.0	56.9	38.1	48.0	31.8	42.3
Foreign												
1985	8.4	5.9	4.6	29.2	9.9	13.5	10.5	37.1	17.1	19.9	12.2	16.6
1987	12.4	4.0	3.8	30.4	14.2	12.2	10.8	45.8	14.5	18.7	12.0	17.0
1989	13.6	9.3	4.8	32.1	15.2	17.0	12.6	48.3	18.2	22.4	14.0	18.9
1990	15.2	5.8	5.4	32.4	16.8	17.7	13.5	50.8	19.2	23.7	14.8	18.8

* Percentages not considered significant and not presented when total men and women is less than 10.

Source: Degrees and Other Formal Awards Conferred, 1989–90 Survey, National Center for Education Statistics

TABLE 2-31

SCIENCE AND ENGINEERING DEGREES BY DEGREE LEVEL, FIELD SEX & RACE/ETHNICITY, 1989–90

FIELD	TOTAL(1)	Women	Men	%Wo	White			Black			Hispanic			Asian			Indian			Foreign		
					Women	Men	%Wh	Women	Men	%Bl	Women	Men	%Hi	Women	Men	%As	Women	Men	%In	Women	Men	%Fo
BACHELORS																						
Agriculture & Nat Resources	13,070	4,115	8,955	31.5	3,715	8,119	90.5	122	200	2.5	65	146	1.6	110	138	1.9	27	49	0.6	76	303	2.9
Computer & Info Sciences	29,486	8,265	21,221	28.0	5,209	14,564	67.1	1,236	1,119	8.0	314	548	2.9	852	1,392	7.6	31	58	0.3	614	1,499	7.2
Engineering & Rel Technologies	82,110	11,303	70,807	13.8	8,208	55,256	77.3	879	2,393	4.0	385	2,205	3.2	1,275	5,647	8.4	29	188	0.3	527	5,118	6.9
Life Sciences	37,170	18,845	18,325	50.7	14,656	14,883	79.5	1,365	672	5.5	618	670	3.5	1,709	1,613	8.9	59	74	0.4	438	433	2.3
Mathematics	14,597	6,785	7,812	46.5	5,641	6,406	82.5	385	349	5.0	145	207	2.4	392	501	6.1	23	24	0.3	199	325	3.6
Physical Sciences	16,131	5,040	11,091	31.2	3,997	9,478	83.5	368	304	4.2	109	275	2.4	353	607	6.0	21	53	0.5	180	421	3.7
SUBTOTAL NATURAL S&E	192,564	54,353	138,211	28.2	41,426	108,706	78.0	4,355	5,037	4.9	1,636	4,051	3.0	4,691	9,898	7.6	190	446	0.3	2,034	8,099	5.3
Psychology	53,586	38,295	15,291	71.5	32,700	13,122	85.5	2,442	825	6.1	1,461	549	3.8	1,173	505	3.1	148	70	0.4	371	162	1.0
Social Services	116,925	51,677	65,248	44.2	42,265	56,153	84.2	4,028	3,120	6.1	1,959	2,122	3.5	2,172	2,143	3.7	258	255	0.4	995	1,455	2.1
SUBTOTAL	170,511	89,972	80,539	52.8	74,965	69,275	84.6	6,470	3,945	6.1	3,420	2,671	3.6	3,345	2,648	3.5	406	325	0.4	1,366	1,617	1.7
TOTAL SCIENCE & ENGINEERING	363,075	144,325	218,750	39.8	116,391	177,981	81.1	10,825	8,982	5.5	5,056	6,722	3.2	8,036	12,546	5.7	596	771	0.4	3,400	9,716	3.6
ALL FIELDS	1,046,930	556,829	490,101	53.2	469,527	413,469	84.3	37,798	23,278	5.8	17,815	14,871	3.1	19,442	19,617	3.7	2,510	1,828	0.4	9,737	17,040	2.6
MASTERS																						
Agriculture & Nat Resources	3,373	1,128	2,245	33.4	819	1,499	68.7	14	36	1.5	20	26	1.4	29	30	1.7	4	3	0.2	242	647	26.4
Computer & Info Sciences	9,643	2,675	6,968	27.7	1,511	3,926	56.4	101	158	2.7	28	105	1.4	364	688	10.9	2	6	0.1	669	2,084	28.5
Engineering & Rel Technologies	24,848	3,419	21,429	13.8	2,167	12,119	57.5	115	332	1.8	72	377	1.8	330	1,682	8.1	9	33	0.2	726	6,835	30.4
Life Sciences	4,861	2,484	2,377	51.1	1,883	1,785	75.5	62	53	2.4	45	49	1.9	135	101	4.9	6	8	0.3	353	381	15.1
Mathematics	3,677	1,472	2,205	40.0	944	1,351	62.4	35	39	2.0	15	32	1.3	82	112	5.3	2	4	0.2	394	667	28.9
Physical Sciences	5,447	1,439	4,008	26.4	936	2,657	66.0	27	34	1.1	26	55	1.5	99	150	4.6	3	6	0.2	348	1,058	25.8
SUBTOTAL NATURAL S&E	51,849	12,617	39,232	24.3	8,260	23,337	60.9	354	652	1.9	206	644	1.6	1,039	2,763	7.3	26	60	0.2	2,732	11,672	27.8
Psychology	9,231	6,239	2,992	67.6	5,286	2,552	84.9	353	139	5.3	201	105	3.3	122	44	1.8	25	14	0.4	252	138	4.2
Social Services	11,419	4,661	6,758	40.8	3,381	4,618	70.0	227	220	3.9	130	154	2.5	158	214	3.3	34	26	0.5	731	1,526	19.8
SUBTOTAL	20,650	10,900	9,750	52.8	8,667	7,170	76.7	580	359	4.5	331	259	2.9	280	258	2.6	59	40	0.5	983	1,664	12.8
TOTAL SCIENCE & ENGINEERING	72,499	23,517	48,982	32.4	16,927	30,507	65.4	934	1,011	2.7	537	903	2.0	1,319	3,021	6.0	85	100	0.3	3,715	13,336	23.5
ALL FIELDS	321,992	169,085	152,907	52.5	138,542	112,976	78.1	9,839	5,492	4.8	4,339	3,566	2.5	4,576	6,070	3.3	543	465	0.3	11,146	24,338	11.0
DOCTORATES																						
Agriculture & Nat Resources	1,272	243	1,029	19.1	150	551	55.1	3	20	1.8	3	12	1.2	11	22	2.6	0	0	0.0	76	424	39.3
Computer & Info Sciences	623	90	533	14.4	71	240	49.9	1	3	0.6	1	1	0.3	1	28	4.7	0	1	0.2	16	260	44.3
Engineering & Rel Technologies	4,965	434	4,531	8.7	258	1,817	41.8	7	27	0.7	6	38	0.9	29	287	6.4	0	5	0.1	134	2,357	50.2
Life Sciences	3,844	1,449	2,395	37.7	1,086	1,720	73.0	20	24	1.1	31	41	1.9	68	98	4.3	0	4	0.1	3	5	0.2
Mathematics	885	139	746	15.7	77	321	45.0	2	5	0.8	1	4	0.6	11	30	4.6	0	0	0.0	78	388	52.4
Physical Sciences	4,168	804	3,364	19.3	512	2,080	62.2	10	18	0.7	17	61	1.9	123	34	3.8	0	5	0.1	231	1,077	31.4
SUBTOTAL NATURAL S&E	15,757	3,159	12,598	20.0	2,154	6,729	56.4	43	97	0.9	59	157	1.4	243	499	4.7	0	15	0.1	538	4,509	32.0
Psychology	3,353	1,939	1,414	57.8	1,694	1,215	86.8	79	38	3.5	65	59	3.7	29	33	1.8	9	8	0.5	63	61	3.7
Social Services	3,023	986	2,037	32.6	732	1,250	65.6	38	75	3.7	35	38	2.4	33	62	3.1	3	2	0.2	145	610	25.0
SUBTOTAL	6,376	2,925	3,451	45.9	2,426	2,465	76.7	117	113	3.6	100	97	3.1	62	95	2.5	12	10	0.3	208	671	13.8
TOTAL SCIENCE & ENGINEERING	22,133	6,084	16,049	27.5	4,580	9,194	62.2	160	210	1.7	159	254	1.9	305	594	4.1	12	25	0.2	746	5,180	26.8
ALL FIELDS	37,980	13,762	24,218	36.2	10,691	15,102	67.9	612	533	3.0	366	417	2.1	372	910	3.4	50	52	0.3	1,671	7,204	23.4

(1) Totals include those who did not designate racial/ethnic origin.

Source: Race/Ethnicity Trends in Degrees Conferred by Institutions of Higher Education: 1978–79 through 1988–89, National Center for Education Statistics, U.S. Department of Education

TABLE 2-32

MASTER'S DEGREES IN SCIENCE AND ENGINEERING BY FIELD, SEX AND RACE/ETHNICITY, 1978–79 – 1988–89

	Total			White Non–Hispanic			Black Non–Hispanic			Hispanic			Asian or Pacific Isl.			Am. Indian/Alask Nat			Nonresident Alien		
Field/Year	Total	Women	%Wo	Total	Women	%Wh	Total	Wom	%B	Total	Wom	%H	Total	Wom	%A	Total	Wom	%I	Total	Wom	%F
All Fields																					
1978–79	301707	148703	49.3	249051	125297	82.5	19993	12948	6.6	5544	2769	1.8	5985	2661	2.0	999	504	0.3	20135	4524	6.7
1980–81	294183	148517	50.5	241216	125654	82.0	17133	10975	5.8	6461	3376	2.2	6282	2509	2.1	1034	533	0.4	22057	5470	7.5
1984–85	280421	141004	50.3	223628	117569	79.7	13939	8739	5.0	6864	3805	2.4	7782	2940	2.8	1256	673	0.4	26952	7278	9.6
1986–87	289341	148077	51.2	228870	123297	79.1	13867	8716	4.8	7044	3714	2.4	8558	3320	3.0	1104	587	0.4	29898	8443	10.3
1988–89	308872	160386	51.9	241607	132423	78.2	14076	8876	4.6	7270	3910	2.4	10714	4467	3.5	1133	633	0.4	34072	10077	11.0
Physical Sciences																					
1978–79	5406	990	18.3	4373	812	80.9	86	19	1.6	52	11	1.0	160	31	3.0	29	3	0.5	706	114	13.1
1980–81	5227	1083	20.7	4115	860	78.7	107	28	2.0	55	10	1.1	153	38	2.9	11	[illegible]	0.2	786	145	15.0
1984–85	5675	1320	23.3	4145	1001	73.0	89	28	1.6	107	20	1.9	213	59	3.8	21	2	0.4	1100	210	19.4
1986–87	5630	1410	25.0	4062	1039	72.1	84	36	1.5	116	31	2.1	241	67	4.3	9	2	0.2	1118	235	19.9
1988–89	5737	1533	26.7	3962	1074	69.1	82	23	1.4	77	24	1.3	292	105	5.1	18	6	0.3	1306	301	22.8
Mathematics																					
1978–79	3033	1051	34.7	2352	873	77.5	71	36	2.3	26	8	0.9	104	37	3.4	8	2	0.3	472	95	15.6
1980–81	2565	875	34.1	1890	678	73.7	67	34	2.6	40	9	1.6	97	33	3.8	7	1	0.3	464	120	18.1
1984–85	2831	988	34.9	1873	703	66.2	53	19	1.9	49	21	1.7	164	56	5.8	7	3	0.2	685	186	24.2
1986–87	3319	1297	39.1	2113	866	63.7	76	29	2.3	55	16	1.7	193	77	5.8	3	2	0.1	879	307	26.5
1988–89	3424	1366	39.9	2123	903	62.0	61	28	1.8	29	9	0.8	186	64	5.4	6	1	0.2	1019	361	29.8
Computer/Information Sciences																					
1978–79	2980	572	19.2	2261	434	75.9	65	22		24	11	0.8	149	34	5.0	16	10	0.5	465	61	15.6
1980–81	4143	967	23.3	2818	665	68.0	70	18	1.7	60	15	1.4	279	74	6.7	12	2	0.3	904	193	21.8
1984–85	6942	2006	28.9	4303	1251	62.0	180	72	2.6	94	29	1.4	615	201	8.9	41	13	0.6	1709	440	24.6
1986–87	8481	2496	29.4	5053	1578	59.6	222	86	2.6	132	34	1.6	834	273	9.8	23	3	0.3	2217	522	26.1
1988–89	9392	2623	27.9	5290	1481	56.3	218	86	2.3	152	45	1.6	987	359	10.5	43	3	0.5	2702	649	28.8
Life Sciences																					
1978–79	6831	2566	37.6	5861	2152	85.8	217	122	3.2	68	28	1.0	205	91	3.0	16	8	0.2	464	165	6.8
1980–81	5978	2324	38.9	5210	1987	87.2	171	89	2.9	69	33	1.2	145	83	2.4	15	6	0.3	368	126	6.2
1984–85	5010	2390	47.7	4079	1954	81.4	151	84	3.0	109	61	2.2	179	93	3.6	18	10	0.4	474	188	9.5
1986–87	4950	2412	48.7	3944	1906	79.7	175	91	3.5	86	46	1.7	198	109	4.0	11	7	0.2	536	253	10.8
1988–89	4933	2449	49.6	3791	1909	76.8	128	67	2.6	113	54	2.3	230	122	4.7	17	9	0.3	654	288	13.3
Psychology																					
1978–79	8730	4329	49.6	7078	3813	81.1	476	301	5.5	176	76	2.0	87	49	1.0	20	10	0.2	893	80	10.2
1980–81	7898	4640	58.7	6916	4071	87.6	424	260	5.4	179	101	2.3	77	43	1.0	32	19	0.4	270	146	3.4
1984–85	8379	5337	63.7	7218	4618	86.1	426	280	5.1	273	159	3.3	129	81	1.5	37	21	0.4	296	178	3.5
1986–87	8124	5296	65.2	7093	4622	87.3	398	275	4.9	243	152	3.0	120	85	1.5	37	24	0.5	233	138	2.9
1988–89	8579	5780	67.4	7420	5018	86.5	414	288	4.8	301	193	3.5	137	91	1.6	35	22	0.4	272	168	3.2
Social Sciences																					
1978–79	12887	4544	35.3	10113	3871		748	333	5.8	251	79	1.9	234	70	1.8	45	17	0.3	1496	374	11.6
1980–81	11917	4475	37.6	9150	3579	76.8	615	304	5.2	280	99	2.3	233	86	2.0	44	16	0.4	1595	391	13.4
1984–85	10223	3925	38.4	7333	3007	71.7	422	188	4.1	272	113	2.7	326	97	3.2	43	18	0.4	1825	502	17.9
1986–87	10395	4102	39.5	7441	3125	71.6	416	190	4.0	245	91	2.4	250	96	2.4	23	6	0.2	2020	592	19.4
1988–89	10854	4361	40.2	7678	3221	70.7	397	197	3.7	247	99	2.3	329	137	3.0	53	22	0.5	2150	685	19.8
Engineering																					
1978–79	15239	950	6.2	9976	708	65.5	241	22	1.6	196	10	1.3	850	48	5.6	24	2	0.2	3952	160	25.9
1980–81	16358	1360	8.3	10147	970	62.0	260	38	1.6	278	27	1.7	1079	105	6.6	31	5	0.2	4563	215	27.9
1984–85	20735	2230	10.8	12600	1588	60.8	360	60	1.7	340	41	1.6	1573	178	7.6	49	4	0.2	5813	359	28.0
1986–87	22658	2850	12.6	13748	2006	60.7	449	98	2.0	529	73	2.3	1757	205	7.8	64	6	0.3	6111	462	27.0
1988–89	24541	3186	13.0	14206	2120	57.9	424	109	1.7	482	78	2.0	2146	307	8.7	37	5	0.2	7246	567	29.5

Source: Race/Ethnicity Trends in Degrees Conferred by Institutions of Higher Education: 1978–79 through 1988–89, National Center for Education Statistics, U.S. Department of Education

TABLE 2-33

BACHELOR'S DEGREES IN SCIENCE AND ENGINEERING BY FIELD, SEX AND RACE/ETHNICITY, 1978–79 – 1988–89

	Total			White Non–Hispanic			Black Non–Hispanic			Hispanic			Asian or Pacific Isl.			Am. Indian/Alask Nat			Nonresident Alien		
Field/Year	Total	Women	%Wo	Total	Women	%Wh	Total	Wom	%B	Total	Wom	%H	Total	Wom	%A	Total	Wom	%I	Total	Wom	%F
All Fields																					
1978–79	916226	443339	48.3	799617	384316	87.2	60125	35581	6.56	20029	9675	2.18	15336	7146	1.67	3404	1674	0.37	17715	4947	1.93
1980–81	934800	465175	49.7	807319	401146	86.3	60673	36162	6.49	21832	11022	2.33	18794	8687	2.01	3593	1893	0.38	22589	6265	2.41
1984–85	968311	492163	50.8	826106	421021	85.3	57473	34455	5.93	25874	13472	2.67	25395	11841	2.62	4246	2248	0.43	29217	9126	3.01
1986–87	991260	510480	51.4	841820	435069	84.9	56555	34056	5.70	26990	14126	2.72	32618	15369	3.29	3971	2152	0.40	29306	9708	2.95
1988–89	1015239	533552	52.5	858186	451530	84.5	58016	35651	5.71	29800	15880	2.93	38219	18682	3.76	4046	2278	0.39	26972	9531	2.65
Physical Sciences																					
1978–79	22861	5220	22.8	20650	4602	90.3	691	268	3.02	339	79	1.48	425	119	1.85	63	18	0.27	693	134	3.03
1980–81	23950	5888	24.5	21246	5122	88.7	906	293	3.78	405	108	1.69	596	184	2.48	65	21	0.27	732	160	3.05
1984–85	23555	6583	27.9	20660	5610	87.7	829	374	3.51	417	107	1.77	763	259	3.23	98	33	0.41	788	200	3.34
1986–87	20071	5699	28.3	17159	4654	85.4	844	399	4.20	423	136	2.10	918	303	4.57	74	28	0.36	653	179	3.25
1988–89	17204	5107	29.6	14502	4143	84.2	708	337	4.11	384	109	2.23	936	300	5.44	63	18	0.36	611	200	3.55
Mathematics																					
1978–79	11724	4891	41.7	10268	4305	87.5	652	332	5.56	194	84	1.65	321	153	2.73	41	13	0.34	248	4	2.11
1980–81	11078	4736	42.7	9445	4023	85.2	584	308	5.27	185	72	1.66	391	168	3.52	18	8	0.16	455	157	4.10
1984–85	14885	6875	46.1	12162	5654	81.7	766	393	5.14	257	109	1.72	880	410	5.91	59	23	0.39	761	286	5.11
1986–87	16444	7652	46.5	13556	6340	82.4	846	444	5.14	269	99	1.63	1050	510	6.38	53	20	0.32	670	239	4.07
1988–89	15237	7016	46.0	12487	5763	81.9	801	421	5.25	310	121	2.03	1034	497	6.78	54	15	0.35	551	199	3.61
Computer/Information Sciences																					
1978–79	8693	2447	28.1	7384	1982	84.9	505	242	5.80	155	45	1.78	262	91	3.01	11	0	0.12	376	87	4.32
1980–81	15120	4918	32.5	12565	3943	83.1	786	392	5.19	302	109	1.99	669	259	4.42	21	4	0.13	777	211	5.13
1984–85	38589	14203	36.8	31321	11133	81.1	2143	1107	5.55	826	342	2.14	2044	886	5.29	139	63	0.36	2116	672	5.48
1986–87	39590	13724	34.6	30251	9771	76.4	2928	1599	7.39	1077	462	2.72	2546	1004	6.43	116	53	0.29	2672	835	6.74
1988–89	30637	9416	30.7	22515	6201	73.4	2557	1313	8.34	902	331	2.94	2355	889	7.68	94	34	0.30	2214	648	7.22
Life Sciences																					
1978–79	48794	19649	40.2	42705	16868	87.5	2487	1341	5.09	1109	432	2.27	1458	637	2.98	148	51	0.30	887	320	1.81
1980–81	43216	19067	44.1	37276	16191	86.2	2269	1315	5.25	1144	496	2.64	1489	659	3.44	137	70	0.31	901	336	2.08
1984–85	38115	18210	47.7	31807	15002	83.4	2045	1239	5.36	1241	560	3.25	1950	928	5.11	161	72	0.42	911	409	2.39
1986–87	38120	18464	48.4	31279	14886	82.0	1932	1192	5.06	1259	602	3.30	2620	1277	6.87	147	68	0.38	883	439	2.31
1988–89	36079	18109	50.1	28896	14262	80.0	1944	1234	5.38	1254	599	3.47	2951	1484	8.17	147	77	0.40	887	453	2.45
Psychology																					
1978–79	42395	25996	61.3	36585	22290	86.2	3214	2164	7.58	1208	718	2.84	766	473	1.80	177	90	0.41	445	261	1.04
1980–81	40833	26538	64.9	34701	22486	84.9	3308	2268	8.10	1305	815	3.19	839	546	2.05	196	128	0.48	484	295	1.18
1984–85	39525	26927	68.1	33953	23085	85.9	2667	1916	6.74	1331	899	3.36	830	553	2.09	201	126	0.50	543	348	1.37
1986–87	42835	29507	68.8	37014	25474	86.4	2535	1852	5.91	1401	942	3.27	1188	771	2.77	186	121	0.43	511	347	1.19
1988–89	48516	34335	70.7	41584	29355	85.7	2815	2154	5.80	1773	1232	3.65	1605	1091	3.30	214	153	0.44	525	350	1.08
Social Sciences																					
1978–79	108000	45379	42.0	92210	37918	85.3	9038	4772	8.36	2917	1199	2.70	1602	731	1.48	497	224	0.46	1736	535	1.60
1980–81	100647	44491	44.2	85535	37026	84.9	8129	4433	8.07	2888	1339	2.86	1645	785	1.63	474	233	0.47	1976	675	1.96
1984–85	90795	40006	44.0	77117	33330	84.9	6100	3322	6.71	2846	1289	3.13	2034	1032	2.24	447	218	0.49	2251	815	2.47
1986–87	96172	42302	43.9	81659	35166	84.9	5942	3266	6.17	2883	1319	2.99	2942	1494	3.05	464	215	0.48	2282	842	2.37
1988–89	107714	47790	44.3	90929	39272	84.4	6498	3624	6.03	3618	1742	3.35	3992	2030	3.70	431	211	0.40	2246	911	2.08
Engineering																					
1978–79	61426	5171	8.41	51794	4431	84.3	1756	225	2.85	1117	86	1.81	1837	215	2.99	162	12	0.26	4760	202	7.74
1980–81	74954	7699	10.2	60848	6395	81.1	2449	429	3.26	1433	131	1.91	3066	367	4.09	195	22	0.26	6963	355	9.28
1984–85	94560	12465	13.1	76438	9960	80.8	3159	724	3.34	2242	307	2.37	5013	881	5.30	313	50	0.33	7395	543	7.82
1986–87	93097	12748	13.6	73288	9680	78.7	3501	921	3.76	2553	375	2.74	6497	1150	6.97	289	42	0.31	6969	580	7.48
1988–89	85273	11622	13.6	66509	8552	77.9	3237	886	3.79	2458	395	2.88	7012	1242	8.22	285	46	0.33	5772	501	6.76

Source: Degrees and Other Formal Awards Conferred, 1984–85 Survey, Office of Civil rights and 1986–87, 1988–19 Survey, National Center for Education Statistics

TABLE 2-34

PERCENT WOMEN AMONG SCIENCE & ENGINEERING GRADUATES BY RACE/ETHNICITY, 1985, 1987 & 1989

FIELD	All Women			White			Black			Hispanic			Indian			Asian			Foreign		
	'85	'87	'89	'85	'87	'89	'85	'87	'89	'85	'87	'89	'85	'87	'89	'85	'89	'87	'85	'87	'89
BACHELORS																					
Agricultural Sciences	36.4	31.2	31.1	37.6	31.1	30.6	24.3	39.1	44.1	37.7	34.2	28.8	39.4	34.5	35.7	46.7	52.5	43.1	15.7	19.0	21.9
Computer & Info Sciences	37.8	34.7	30.7	36.7	32.3	27.5	51.9	54.6	51.3	41.8	42.9	36.7	44.8	45.7	36.2	43.5	37.7	39.4	31.6	31.3	29.3
Engineering	14.5	15.3	15.2	14.5	14.9	14.5	27.8	30.5	32.3	15.2	16.3	17.5	17.9	14.0	20.1	18.9	18.7	19.0	7.6	8.8	9.3
Life Sciences	47.8	48.4	50.2	47.3	47.6	49.4	55.2	61.7	63.5	46.2	47.8	47.8	44.4	46.3	52.4	47.5	50.3	48.7	37.1	49.7	51.1
Mathematics	46.0	46.5	46.0	46.7	46.8	46.2	51.8	52.5	52.6	43.7	36.8	39.0	39.3	37.7	27.8	45.1	48.1	48.6	37.6	35.7	36.1
Physical Sciences	31.0	28.4	29.7	30.6	27.1	28.6	45.7	47.3	47.6	26.4	32.2	28.4	33.3	37.8	28.6	34.0	32.1	33.0	25.8	27.4	32.7
SUBTOTAL NATURAL S&E	30.6	30.3	30.1	30.4	29.7	29.3	45.4	48.5	48.9	31.4	32.4	31.2	34.6	33.1	33.8	32.9	32.5	32.8	18.0	20.3	21.1
Psychology	68.0	68.9	70.8	67.9	68.8	70.6	72.2	73.1	76.5	68.5	67.2	69.5	56.3	65.1	71.5	67.0	68.0	64.9	53.7	67.9	66.7
Social Services	44.0	44.0	44.4	43.1	43.1	43.2	52.9	55.0	55.8	46.2	45.8	48.1	48.2	46.3	49.0	50.1	50.9	50.8	36.5	36.9	40.6
SUBTOTAL	51.3	51.7	52.6	50.7	51.1	51.8	58.6	60.4	62.0	53.2	52.8	55.2	50.8	51.7	56.4	55.0	55.8	54.8	40.3	42.6	45.5
TOTAL S&E	38.8	39.0	40.6	38.5	38.7	40.2	9.9	54.2	55.8	41.6	41.5	43.6	42.3	42.3	45.4	37.7	39.3	38.1	22.6	24.7	26.4
ALL FIELDS	50.8	51.5	52.6	56.9	51.7	52.6	59.8	60.2	61.5	53.1	52.3	53.3	52.5	54.2	56.3	46.6	48.9	47.1	30.9	33.1	35.3
MASTERS																					
Agricultural Sciences	31.2	30.1	31.2	35.5	33.8	34.1	40.9	20.3	22.6	20.5	31.8	30.4	25.0	33.3	0.0	[illegible]	41.5	37.9	19.4	18.9	24.0
Computer & Info Sciences	28.7	29.4	27.9	29.0	31.2	28.0	39.8	38.7	39.4	30.1	25.8	29.6	30.0	13.0	7.0	33.8	36.4	32.7	25.6	23.5	24.0
Engineering	10.7	12.6	13.0	12.8	14.6	15.0	18.2	21.7	25.9	12.2	13.6	16.1	9.4	15.4	11.4	11.3	14.5	11.8	6.4	7.5	7.8
Life Sciences	47.7	48.7	49.6	47.9	48.3	50.4	55.9	52.0	52.3	58.0	53.5	47.8	54.5	63.6	52.9	50.9	53.0	55.1	39.3	47.2	44.0
Mathematics	35.0	39.1	39.9	37.9	41.0	42.5	36.0	38.2	45.9	41.9	29.1	31.0	50.0	66.7	16.7	34.2	34.4	39.9	27.9	34.9	35.4
Physical Sciences	23.3	25.0	26.7	24.2	25.6	27.1	31.6	42.9	28.0	19.4	26.7	31.2	6.7	22.2	33.3	29.3	36.0	27.8	18.9	21.0	23.0
SUBTOTAL NATURAL S&E	22.1	23.9	23.9	25.1	26.4	26.4	33.6	33.1	34.1	25.0	22.2	25.0	24.1	24.2	18.4	21.9	25.3	23.2	14.8	16.6	17.3
Psychology	63.9	65.2	67.4	63.8	65.2	67.6	65.8	69.1	69.6	58.1	62.6	64.1	63.3	64.9	62.9	63.5	66.4	70.8	60.9	59.2	61.8
Social Services	38.4	39.5	40.2	41.0	42.0	42.0	44.9	45.7	49.6	41.4	37.1	40.1	41.4	26.1	41.5	28.7	41.6	39.2	27.6	29.3	31.9
SUBTOTAL	49.8	50.7	52.2	52.1	53.3	54.6	55.4	57.1	59.8	49.6	49.8	53.3	52.5	50.0	50.0	38.4	48.9	49.5	32.2	32.4	35.2
TOTAL S&E	30.5	31.4	31.8	34.3	35.0	35.6	44.6	43.6	46.2	35.4	31.6	35.7	34.1	34.4	31.5	24.1	27.9	25.9	17.8	19.2	20.0
ALL FIELDS	50.0	51.2	51.9	53.0	53.9	53.9	63.4	62.9	62.9	56.4	52.7	52.7	52.9	53.2	53.2	37.9	38.8	38.8	27.1	28.2	28.2
DOCTORATES																					
Agricultural Sciences	14.0	16.9	19.6	16.7	19.1	23.3	10.0	27.8	20.0	8.3	20.0	15.0	0.0	0.0	0.0	13.5	26.7	12.5	8.4	12.4	13.6
Computer & Info Sciences	10.1	13.9	15.1	12.1	18.7	18.2	0.0	50.0	100.0	0.0	16.7	75.0	0.0	0.0	0.0	7.7	11.9	20.0	5.9	4.0	9.3
Engineering	6.4	6.9	8.8	7.9	10.2	13.4	14.7	10.3	10.0	1.2	4.4	14.0	25.0	0.0	0.0	7.6	8.0	7.0	4.6	3.8	4.8
Life Sciences	32.7	34.9	36.7	32.1	35.1	37.3	38.5	43.4	39.7	43.1	39.0	23.4	50.0	20.0	40.0	37.3	45.4	44.3	29.2	30.4	32.1
Mathematics	15.6	17.3	19.4	19.2	18.3	22.3	0.0	11.1	37.5	28.6	22.2	28.6	0.0	0.0	100.0	14.3	27.3	35.1	9.9	14.2	15.2
Physical Sciences	16.3	17.2	19.7	16.4	18.7	20.9	25.9	15.4	18.8	13.9	28.3	20.4	33.3	0.0	30.8	25.8	19.5	22.3	13.5	12.2	17.0
SUBTOTAL NATURAL S&E	18.1	18.7	20.3	20.8	22.3	24.6	24.8	27.0	27.6	18.8	22.6	20.6	30.8	6.7	33.3	19.1	20.6	21.5	10.5	10.8	12.6
Psychology	48.8	53.3	56.2	48.9	52.7	56.1	55.0	63.9	64.6	52.2	67.6	58.4	33.3	62.5	62.5	51.2	57.4	56.9	37.1	45.8	48.3
Social Services	32.2	30.5	32.6	35.8	35.3	37.5	40.6	40.0	42.6	30.2	26.5	40.0	75.0	50.0	20.0	32.8	32.7	23.4	17.1	14.5	18.2
SUBTOTAL	40.6	42.2	45.2	43.1	45.2	48.7	48.0	52.1	53.8	39.4	47.5	51.0	57.1	60.0	38.9	40.6	42.0	36.7	19.9	18.7	22.4
TOTAL S&E	25.5	26.1	27.7	29.0	30.9	33.3	38.6	41.6	43.4	25.7	32.3	34.6	40.0	37.1	35.6	22.1	24.3	23.9	12.4	12.0	14.0
ALL FIELDS	34.1	35.2	36.5	37.4	39.4	41.5	51.8	54.0	53.6	36.4	41.5	43.7	51.8	44.2	41.7	27.1	28.6	27.5	16.6	17.0	18.9

Source: NCES

TABLE 2-35
PERCENT OF SCIENCE AND ENGINEERING BACHELOR DEGREES EARNED BY MINORITIES

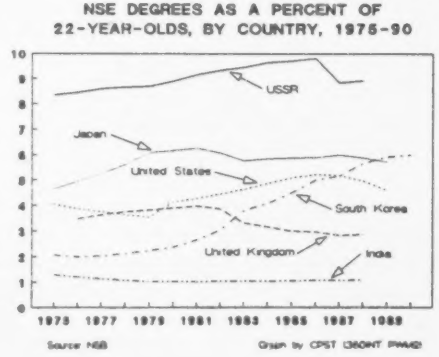
FIELD	Year				% BLACK				% HISPANIC				% ASIAN			
	1985	1987	1989	1990	1985	1987	1989	1990	1985	1987	1989	1990	1985	1987	1989	1990
Agriculture & Nat Res	12,328	14,991	13,488	13,070	2.0	2.0	2.3	2.5	1.4	1.5	1.6	1.6	1.3	1.9	1.8	1.9
Computer & Info Sci	38,117	39,590	30,637	29,486	5.5	7.4	8.3	8.0	2.1	2.7	2.9	2.9	5.2	6.4	7.7	7.6
Engineering	77,567	73,839	66,296	64,077	2.6	3.2	3.2	4.0	2.3	2.7	2.9	3.2	5.6	7.7	9.3	8.4
Life Sciences	39,504	38,120	36,079	37,170	5.5	5.1	5.4	5.5	3.1	3.3	3.5	3.5	4.7	6.9	8.2	8.9
Mathematics	15,287	16,444	15,237	14,597	5.0	5.1	5.3	5.0	1.6	1.6	2.0	2.4	5.7	6.4	6.8	6.1
Physical Sciences	24,876	20,071	17,204	16,131	3.2	4.2	4.1	4.2	1.7	2.1	2.2	2.4	2.9	4.6	5.4	6.0
SUBTOTAL NATURAL S&E	207,679	203,055	178,941	174,531	3.9	4.5	4.7	4.9	2.2	2.6	2.8	3.0	4.8	6.5	7.6	7.6
Psychology	40,356	42,835	48,516	53,586	6.2	5.9	5.8	6.1	3.2	3.3	3.7	3.8	2.0	2.8	3.3	3.1
Social Sciences	92,432	96,172	107,714	116,925	6.5	6.2	6.0	6.1	3.1	3.0	3.4	3.5	2.1	3.1	3.7	3.7
Subtotal	132,788	139,007	156,230	170,511	6.4	6.1	6.0	6.1	3.1	3.1	3.5	3.6	2.0	3.0	3.6	3.5
TOTAL S&E	340,467	342,062	335,171	345,042	4.9	5.2	5.3	5.5	2.6	2.8	3.1	3.2	3.7	5.0	5.7	5.7
TOTAL ALL FIELDS	991,477	991,260	1,015,239	1,046,930	5.6	5.7	5.7	5.8	2.6	2.7	2.9	3.1	2.4	3.3	3.8	3.7

SOURCE: Science and Engineering Indicators, National Science Board, 1991

TABLE 2-36
NATURAL SCIENCE AND ENGINEERING DEGREES AS A PERCENTAGE OF 22-YEAR-OLDS BY COUNTRY 1975 – 1990

Year	Western Countries and USSR						Asia					
	USSR	United States	United Kingdom	France	Italy	West Germany	Japan	South Korea	Taiwan	Singapore	India	China
1975	8.35	4.05		1.97	2.34	1.23	4.67	2.07		1.40	1.29	
1976	8.44	3.88	3.48	2.02	2.38	1.24	4.96	2.00	2.59	1.14	1.21	
1977	8.59	3.75	3.62	2.03	2.34	1.34	5.28	2.03	2.53	1.17	1.14	
1978	8.67	3.65	3.75	2.09	2.27	1.32	5.61	2.13	2.61	1.06	1.08	
1979	8.69	3.55	3.82	2.21	2.13	1.38	6.10	2.24	2.76	1.40	1.02	
1980	8.89	4.14	3.89	2.40	2.15	1.53	6.16	2.37	2.75	1.45	1.02	
1981	9.16	4.29	3.97	2.46	2.15	1.58	6.26	2.66	3.01	1.33	1.03	
1982	9.34	4.46	3.87	2.42	2.08	1.44	6.08	3.03	2.99	1.58	1.04	1.18
1983	9.45	4.65	3.31	2.46	1.96	1.54	5.77	3.80	3.01	2.15	1.05	0.66
1984	9.65	4.88	3.16	2.58	2.07	1.57	5.85	4.08	2.99	2.27	1.05	0.55
1985	9.71	5.10	3.00	2.75	2.13	1.62	5.88	4.51	3.18	2.83	1.06	0.46
1986	9.81	5.22	2.96	2.93	2.19	1.76	5.90	5.00	3.26	3.40	1.07	0.50
1987	8.84	5.19	2.83	3.12	2.47	1.82	6.00	5.17	3.32	3.63	1.08	0.58
1988	8.93	4.97	2.87	3.21	2.51	2.13	5.88	5.66	3.61	4.79	1.09	0.56
1989		4.60					5.72	5.92		4.70		
1990								5.99				

CHART 2-7



Source: Women and Minorities in Science and Engineering, National Science Foundation, 1986 and Earned Degrees, 1982 – 1990
Center for Education Statistics

TABLE 2-37
GRADUATE DEGREE ATTAINMENT RATES IN SCIENCE AND ENGINEERING. BY SEX, 1972 – 1990

			Masters				PhDs							
	Bachelors		No.		2–Yr		No.		6–Yr		7–Yr		8–Yr	
Year	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
1964	120,888	32,473												
1965	128,723	36,213												
1966	133,989	39,482	33,201	4,882	27.5	15.0								
1967	143,847	44,002	36,083	5,717	28.0	15.8								
1968	158,711	53,463	38,913	6,512	29.0	16.5								
1969	181,323	63,196	41,111	7,314	28.6	16.6								
1970	195,244	68,878	40,741	8,577	25.7	16.0	16,112	1,527	13.3	4.7				
1971	198,180	72,996	41,966	8,658	23.1	13.7	16,666	1,800	12.9	5.0	13.8	5.5		
1972	203,557	77,671	44,010	9,557	22.5	13.9	16,502	1,910	12.3	4.8	12.8	5.3	13.7	5.9
1973	211,552	83,839	44,474	9,760	22.4	13.4	16,310	2,288	11.3	5.2	12.2	5.8	12.7	6.3
1974	213,269	91,793	43,630	10,545	21.4	13.6	15,453	2,412	9.7	4.5	10.7	5.5	11.5	6.1
1975	201,578	93,341	42,847	11,005	20.3	13.1	15,147	2,637	8.4	4.2	9.5	4.9	10.5	6.0
1976	196,577	95,597	42,675	12,072	20.0	13.2	14,500	2,788	7.4	4.0	8.0	4.4	9.1	5.2
1977	191,090	97,453	43,577	13,154	21.6	14.1	13,979	2,958	7.1	4.1	7.2	4.3	7.7	4.7
1978	188,107	100,060	42,547	13,690	21.6	14.3	13,157	3,039	6.5	3.9	6.6	4.2	6.7	4.4
1979	186,333	102,292	40,416	14,040	21.2	14.4	13,053	3,310	6.2	3.9	6.4	4.3	6.6	4.5
1980	186,009	105,974	40,010	14,383	21.3	14.4	13,740	3,784	6.4	4.1	6.5	4.5	6.7	4.9
1981	184,421	106,783	38,835	14,875	20.8	14.5	13,880	4,116	6.9	4.4	6.5	4.5	6.6	4.9
1982	186,995	111,473	40,020	15,768	21.5	14.9	13,747	4,270	7.0	4.5	6.8	4.6	6.4	4.7
1983	190,508	114,022	40,857	16,873	22.2	15.8	13,769	4,624	7.2	4.7	7.0	4.8	6.8	5.0
1984	193,152	115,358	41,479	17,396	22.2	15.6	13,810	4,701	7.3	4.7	7.2	4.8	7.0	4.9
1985	197,114	118,837	42,570	18,018	22.3	15.8	13,899	4,881	7.5	4.8	7.4	4.9	7.3	5.0
1986	203,384	120,566	43,586	18,871	22.6	16.4	14,168	5,085	7.6	4.8	7.6	5.0	7.5	5.1
1987	195,633	123,309	43,204	19,301	21.9	16.2	14,466	5,237	7.8	4.9	7.8	4.9	7.8	5.1
1988	184,671	122,089	44,416	19,481	21.8	16.2	15,159	5,573	8.1	5.0	8.2	5.2	8.1	5.3
1989	182,056	122,175	47,715	20,158	24.4	16.3	15,522	6,008	8.1	5.3	8.3	5.4	8.4	5.6
1990	181,002	127,166	46,003	21,614	24.9	17.7	16,399	6,274	8.5	5.4	8.6	5.5	8.8	5.6

Note: 2–Year Masters attainment rates based on Bachelors two years previous, 6–Year, 7–Year and 8–Year PhD attainment rates based on Bachelors degrees previous 6, 7 & 8 years respectively.

Source: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System

TABLE 2-38
ASSOCIATE DEGREES AWARDED BY FIELD, SEX & RACIAL/ETHNIC GROUP 1988–89

					White			Black			Hispanic			Asian			Indian			Foreign		
FIELD	TOTAL	Women	Men	%W	Women	Men	%W	Wom	Men	%B	Wom	Men	%H	Wom	Men	%A	Wom	Men	%I	Wom	Men	%F
ALL FIELDS	499342	247037	252305	49.5	203049	207339	82.2	21585	17533	7.8	11122	13001	4.8	6113	8224	2.9	2003	1879	0.8	3165	4329	1.5
Agriculture & Nat Resources	4740	1666	3074	35.1	1561	2913	94.4	18	24	0.9	59	50	2.3	9	13	0.5	6	29	0.7	13	45	1.2
Architecture & Env. Design	1815	1559	256	85.9	1355	191	85.2	55	13	3.7	64	17	4.5	47	15	3.4	2	2	0.2	36	18	3.0
Area & Ethnic Studies	15	7	8	46.7	2	1	20.0	1	4	33.3	0	0	0.0	0	1	6.7	4	2	40.0	0	0	0.0
Business & Management	106579	73458	33121	68.9	58752	26753	80.2	7924	3057	10.3	3288	1455	4.5	1970	1041	2.8	589	193	0.7	935	622	1.5
Communications	3744	1631	2113	43.6	1359	1792	84.2	138	168	8.2	52	74	3.4	23	27	1.3	9	13	0.6	50	39	2.4
Computer & Info Sciences	7914	3909	4005	49.4	2865	3180	76.4	556	315	11.0	177	199	4.8	187	170	4.5	39	24	0.8	85	117	2.6
Education	7330	5196	2132	70.9	4229	1584	79.3	474	253	9.9	297	157	6.2	57	46	1.4	85	42	1.7	56	50	1.4
Engineering	2682	313	2369	11.7	230	1884	78.8	24	103	4.7	23	111	5.0	26	180	7.7	2	11	0.5	8	80	3.3
Engineering Technologies	53176	4986	48190	9.4	3933	39909	82.4	541	2970	6.6	188	2224	4.5	215	2151	4.4	47	349	0.7	62	587	1.2
Foreign Languages	332	220	112	66.3	166	90	77.1	9	2	3.3	28	7	10.5	4	4	2.4	5	5	3.0	8	4	3.6
Health Professions	59328	52351	6977	88.2	44758	5624	84.9	4374	534	8.3	1610	442	3.5	920	227	1.9	360	50	0.7	329	100	0.7
Home Economics	10430	7126	3304	68.3	5591	2910	81.5	812	193	9.6	390	65	4.4	161	90	2.6	61	15	0.7	91	31	1.2
Law	3742	3271	471	87.4	2838	378	85.9	214	44	6.9	105	28	3.6	40	2	1.1	28	8	1.0	46	11	1.5
Letters	526	362	164	68.8	287	119	77.2	24	22	8.7	17	6	4.4	9	4	2.5	9	7	3.0	16	6	4.2
Liberal/General Studies	187785	69302	118483	36.9	57266	97083	82.2	4707	8138	6.8	3799	6686	5.6	1852	3355	2.8	550	908	0.8	1128	2313	1.8
Library/Archival Sciences	103	91	12	88.3	78	10	85.4	5	0	4.9	4	1	4.9	2	0	1.9	2	1	2.9	0	0	0.0
Life Sciences	970	558	412	57.5	418	310	75.1	49	18	6.9	36	26	6.4	25	31	5.8	12	8	2.1	18	19	3.8
Mathematics	654	239	415	36.5	181	301	73.7	9	17	4.0	17	33	7.6	23	45	10.4	3	6	1.4	6	13	2.9
Military Science	164	31	133	18.9	24	109	81.1	5	17	13.4	2	7	5.5	0	0	0.0	0	0	0.0	0	0	0.0
Multi/Interdiciplinary	11312	6177	5135	54.6	5488	4504	88.3	278	290	5.0	187	170	3.2	148	119	2.4	35	14	0.4	41	38	0.7
Parks & Recreation	615	312	303	50.7	279	249	85.9	20	25	7.3	11	19	4.9	1	5	1.0	0	1	0.2	1	4	0.8
Philosophy & Religion	81	23	58	28.4	20	50	86.4	0	0	0.0	1	1	2.5	0	3	3.7	1	1	2.5	1	3	4.9
Physical Sciences	1947	812	1135	41.7	694	932	83.5	43	39	4.2	32	60	4.7	26	69	4.9	2	1	0.2	15	34	2.5
Protective Services	11655	3285	8370	28.2	2531	7109	82.7	471	561	6.9	221	480	6.0	15	123	1.2	32	61	0.8	15	36	0.4
Psychology	1085	805	280	74.2	643	210	78.6	53	30	7.6	71	24	8.8	9	5	1.3	8	5	1.2	21	6	2.5
Public Affairs	4482	2216	2266	49.4	1676	1871	79.1	359	134	11.0	76	141	4.8	50	47	2.2	39	31	1.6	16	42	1.3
Social Sciences	2774	1526	1248	55.0	1117	840	70.5	163	162	11.7	118	118	8.5	73	73	5.3	29	29	2.1	26	26	1.9
Theology	568	248	320	43.7	224	286	89.8	6	18	4.2	8	9	3.0	6	2	1.4	2	0	0.4	2	5	1.2
Visual & Performing Arts	12794	5355	7439	41.9	4484	6147	83.1	253	382	5.0	241	391	4.9	195	376	4.5	42	63	0.8	140	80	1.7

Note: This tabulation excludes 1410 men and 1018 women whose racial/ethnic group could not be imputed. Because of imputation methods, field of study totals by race/ethnicity may differ slightly from field of study totals by sex of student.

TABLE 2-39
ASSOCIATE DEGREES AND OTHER SUBBACCALAUREATE AWARDS BY LENGTH OF CURRICULUM, SEX AND FIELD 1987-88

Field of study	Less than 1-year awards			1- to 4-year awards			Associate degrees		
	Total	Men	Women	Total	Men	Women	Total	Men	Women
1	2	3	4	5	6	7	8	9	10
Total	**56,770**	**30,293**	**26,477**	**109,406**	**48,370**	**61,036**	**435,537**	**190,189**	**245,348**
Agriculture and natural resources, total	2,381	1,783	598	1,397	972	425	4,991	3,370	1,621
Agricultural business and agricultural production	1,708	1,272	436	1,116	757	359	3,003	2,043	960
Agricultural science	579	426	153	145	97	48	977	471	506
Renewable natural resources	94	85	9	136	118	18	1,011	856	155
Architecture and environmental design	54	4	50	655	96	559	1,811	218	1,593
Area and ethnic studies	30	13	17	124	6	118	18	4	14
Business and management	12,493	3,302	9,191	35,212	5,607	29,605	111,139	35,184	75,955
Accounting	134	33	101	805	193	612	4,895	1,326	3,569
Business and management, general	438	206	232	733	258	475	12,511	5,191	7,320
Business administration and management	653	292	361	900	337	563	22,307	9,581	12,726
Business and management, other	1,340	726	614	2,080	909	1,171	11,380	5,841	5,539
Business data processing	1,756	618	1,138	3,242	1,049	2,193	10,272	4,386	5,886
Secretarial and related programs	3,544	120	3,424	14,155	383	13,772	18,753	255	18,498
Business and office, other	1,318	354	964	3,981	769	3,212	15,111	4,223	10,888
Marketing and distribution	2,530	881	1,649	4,391	989	3,402	15,024	3,936	11,088
Consumer and personal services	780	72	708	4,925	720	4,205	886	445	441
Communications	210	140	70	461	318	143	1,933	1,008	925
Communications technologies	45	34	11	289	148	141	1,476	903	573
Computer and information sciences	1,465	700	765	1,824	814	1,010	8,647	4,489	4,158
Education	162	27	135	559	41	518	7,237	2,315	4,922
Engineering	149	103	46	227	159	68	3,856	3,443	413
Engineering technologies	13,549	12,875	674	27,850	26,216	1,634	58,405	53,164	5,241
Mechanics and repairers	3,920	3,654	266	12,845	12,285	560	10,450	9,895	555
Construction trades	1,258	1,177	81	3,249	3,107	142	2,035	1,971	64
Engineering technologies, other	8,371	8,044	327	11,756	10,824	932	45,920	41,298	4,622
Foreign languages	151	59	92	15	3	12	418	225	193
Health sciences	13,661	3,520	10,141	22,653	3,286	19,367	59,805	6,947	52,858
Dental assisting	86	0	86	2,565	120	2,445	3,681	252	3,429
Emergency medical technician-ambulance	2,349	1,654	695	410	236	174	79	61	18
Emergency medical technician-paramedic	430	254	176	770	550	220	277	185	92
Medical lab technician	47	4	43	69	12	57	1,836	403	1,433
Medical assisting	510	41	469	1,976	43	1,933	1,701	42	1,659
Nursing assisting	4,891	484	4,407	1,198	265	933	8	2	6
Practical nursing	452	25	427	8,871	672	8,199	561	39	522
Nursing, general	90	3	87	981	82	899	36,310	2,556	33,754
Health sciences, other	4,806	1,055	3,751	5,813	1,306	4,507	15,352	3,407	11,945
Home economics	1,724	603	1,121	3,674	754	2,920	9,744	2,938	6,806
Law	702	68	634	821	126	695	3,138	369	2,769
Letters	40	8	32	46	16	30	488	165	323
Liberal/general studies	853	370	483	870	399	471	113,159	48,088	65,071
Library and archival sciences	32	1	31	63	9	54	70	8	62
Life sciences	121	101	20	5	3	2	854	347	507
Mathematics	1	0	1	12	7	5	682	432	250
Military sciences	0	0	0	3	3	0	138	118	20
Multi/interdisciplinary studies	94	9	85	122	65	57	10,837	4,921	5,916
Parks and recreation	28	14	14	68	46	22	621	291	330
Philosophy and religion	3	2	1	21	6	15	94	64	30
Theology	69	25	44	613	295	318	627	382	245
Physical sciences	28	20	8	79	51	28	1,891	1,113	778
Science technologies	25	18	7	59	35	24	743	435	308
Physical sciences, other	3	2	1	20	16	4	1,148	678	470
Psychology	26	1	25	71	15	56	1,008	299	709
Protective services	2,980	2,445	535	3,033	2,464	569	11,819	8,664	3,155
Criminal justice administration and studies	1,208	986	222	658	481	177	5,044	3,417	1,627
Law enforcement and security services	757	636	121	744	598	146	4,351	3,259	1,092
Fire control and safety	420	379	41	450	404	46	1,397	1,344	53
Protective services, other	595	444	151	1,181	981	200	1,027	644	383
Public affairs	2,594	2,242	352	762	521	241	3,651	1,620	2,031
Transportation and material moving	2,413	2,139	274	548	480	68	1,327	1,125	202
Public affairs, other	181	103	78	214	41	173	2,324	495	1,829
Social sciences	28	13	15	174	91	83	2,713	1,155	1,558
Visual and performing arts	1,953	1,509	444	7,249	5,703	1,546	13,905	7,834	6,071
Fine arts, general	31	9	22	56	26	30	1,140	394	746
Graphic arts technician	85	22	63	158	71	87	766	232	534
Precision production	1,752	1,471	281	6,679	5,423	1,256	9,357	6,036	3,321
Visual and performing arts, other	85	7	78	356	183	173	2,642	1,172	1,470
Undistributed	1,144	302	842	454	130	324	362	111	251

[1] Preliminary data.

SOURCE: Digest of Education Statistics, 1990, National Center for Education Sttistics

TABLE 2-40
ASSOCIATE DEGREES BY SEX 1965-66 TO 1994-95

Year	Associate Degrees			
	Total	Men	Women	%Wom
1965-66	111,607	63,779	47,828	42.9
1966-67	139,183	78,356	60,827	43.7
1967-68	159,441	90,317	69,124	43.4
1968-69	183,279	105,661	77,618	42.3
1969-70	206,023	117,432	88,591	43.0
1970-71	252,610	144,395	108,215	42.8
1971-72	292,119	166,317	125,802	43.1
1972-73	316,174	175,413	140,761	44.5
1973-74	343,924	188,591	155,333	45.2
1974-75	360,171	191,017	169,154	47.0
1975-76	391,454	209,996	181,458	46.4
1976-77	406,377	210,842	195,535	48.1
1977-78	412,246	204,718	207,528	50.3
1978-79	402,702	192,091	210,611	52.3
1979-80	400,910	183,737	217,173	54.2
1980-81	416,377	188,638	227,739	54.7
1981-82	434,515	196,939	237,576	54.7
1982-83	456,441	207,141	249,300	54.6
1983-84	452,416	202,762	249,654	55.2
1984-85	454,712	202,932	251,780	55.4
1985-86	446,047	196,166	249,881	56.0
1986-87	437,137	191,525	245,612	56.2
1987-88	435,085	190,047	245,038	56.3
1988-89	435,529	185,540	249,989	57.4
1989-90	459,539	192,980	266,559	58.0
1990-91*	470,267	193,048	277,219	58.9
1991-92*	464,534	200,506	264,028	56.8
1992-93*	461,150	199,059	262,091	56.8
1993-94*	459,041	198,610	260,431	56.7
1994-95*	458,012	198,411	259,601	56.7

* Projected by NCES

TABLE 3-1
FIRST-PROFESSIONAL DEGREES BY SEX 1960-61 TO 1994-95

Year	Total	Men	Women	%Wom
1960-61	25,253	24,577	676	2.7
1961-62	25,607	24,836	771	3.0
1962-63	26,590	25,753	837	3.1
1963-64	27,209	26,357	852	3.1
1964-65	28,290	27,283	1,007	3.6
1965-66	30,124	28,982	1,142	3.8
1966-67	31,695	30,401	1,294	4.1
1967-68	33,939	32,402	1,537	4.5
1968-69	35,114	33,595	1,519	4.3
1969-70	34,578	32,794	1,784	5.2
1970-71	37,946	35,544	2,402	6.3
1971-72	43,411	40,723	2,688	6.2
1972-73	50,018	46,489	3,529	7.1
1973-74	53,816	48,530	5,286	9.8
1974-75	55,916	48,956	6,960	12.4
1975-76	62,649	52,892	9,757	15.6
1976-77	64,359	52,374	11,985	18.6
1977-78	66,581	52,270	14,311	21.5
1978-79	68,848	52,652	16,196	23.5
1979-80	70,131	52,716	17,415	24.8
1980-81	71,340	52,194	19,146	26.8
1981-82	72,032	52,223	19,809	27.5
1982-83	73,136	51,310	21,826	29.8
1983-84	74,407	51,334	23,073	31.0
1984-85	71,059	47,501	23,558	33.2
1985-86	73,910	49,261	24,649	33.4
1986-87	71,617	46,522	25,095	35.0
1987-88	70,735	45,484	25,251	35.7
1988-89	70,856	45,046	25,810	36.4
1989-90	70,736	43,819	26,917	38.1
1990-91*	72,528	44,934	27,594	38.0
1991-92*	75,742	48,476	27,266	36.0
1992-93*	76,782	48,477	28,305	36.9
1993-94*	77,863	49,303	28,560	36.7
1994-95*	77,291	48,476	28,815	37.3

* Projected by NCES

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 3-2
DOCTORATES IN PROFESSIONAL FIELDS BY FIELD AND SEX, 1983 – 1991

FIELD	Total					WOMEN					% WOMEN				
	'83–87	1988	1989	1990	1991	'83–87	1988	1989	1990	1991	'83–87	1988	1989	1990	1991
PROFESSIONAL FIELDS, TOTAL	**9,500**	**2,092**	**2147**	**2216**	**2417**	**3041**	**672**	**748**	**775**	**837**	**32.0**	**32.1**	**34.8**	**35.0**	**34.6**
BUSINESS AND MANAGEMENT	**4298**	**1,039**	**1071**	**1038**	**1164**	**884**	**247**	**279**	**266**	**292**	**20.6**	**23.8**	**26.1**	**25.6**	**25.1**
Accounting	792	174	184	173	172	191	56	60	59	57	24.1	32.2	32.6	34.1	33.1
Banking & Finance	602	148	152	133	172	72	22	23	11	21	12.0	14.9	15.1	8.3	12.2
Business Admin & Management	983	267	246	278	204	178	55	51	67	57	18.1	20.6	20.7	24.1	27.9
Business Economics	130	27	27	21	19	16	2	6	3	4	12.3	7.4	22.2	14.3	21.1
Management Info Systems	515	126	132	120	71	138	32	43	38	14	26.8	25.4	32.6	31.7	19.7
Business Statistics	35	6	15	10	5	3	1	4	2	0	8.6	16.7	26.7	20.0	0.0
Operations Research	238	50	52	46	58	35	11	7	8	9	14.7	22.0	13.5	17.4	15.5
Organizational Behavior	312	74	94	65	72	122	33	41	31	37	39.1	44.6	43.6	47.7	51.4
Business & Management, General	267	80	61	70	123	44	14	17	15	23	16.5	17.5	27.9	21.4	18.7
Business & Management, Other	424	87	108	122	134	85	21	27	32	32	20.0	24.1	25.0	26.2	23.9
COMMUNICATIONS, TOTAL	**1340**	**247**	**304**	**322**	**333**	**573**	**96**	**139**	**143**	**157**	**42.8**	**38.9**	**45.7**	**44.4**	**47.1**
Communications Research	340	72	83	86	72	140	24	41	38	28	41.2	33.3	49.4	44.2	38.9
Journalism	85	21	15	21	7	23	5	8	6	4	27.1	23.8	53.3	28.6	57.1
Mass Communications					68					26					38.2
Radio & Television	95	12	29	17	6	29	2	10	8	3	30.5	16.7	34.5	47.1	50.0
Communication Theory					25					13					52.0
Communications, General	394	70	79	86	70	171	32	35	37	34	43.4	45.7	44.3	43.0	48.6
Communications, Other	426	72	98	112	85	210	33	45	54	49	49.3	45.8	45.9	48.2	57.6
OTHER PROF FIELDS, TOTAL	**3862**	**806**	**772**	**856**	**839**	**1584**	**329**	**330**	**366**	**348**	**41.0**	**40.8**	**42.7**	**42.8**	**41.5**
Architecture, Environmental Design	155	31	43	41	67	30	6	12	14	19	19.4	19.4	27.9	34.1	28.4
Home Economics	431	58	55	75	30	365	49	48	63	28	84.7	84.5	87.3	84.0	93.3
Law	126	33	26	33	22	11	5	5	7	6	8.7	15.2	19.2	21.2	27.3
Library & Archival Science	296	57	63	42	53	176	33	38	31	34	59.5	57.9	60.3	73.8	64.2
Public Administration	512	92	96	86	107	136	28	38	22	32	26.6	30.4	39.6	25.6	29.9
Social Work	1078	236	209	245	239	645	140	132	158	162	59.8	59.3	63.2	64.5	67.8
Theology	1137	250	232	273	275	164	40	38	45	45	14.4	16.0	16.4	16.5	16.4
Professional Fields, Other	127	49	48	61	46	57	28	19	26	22	44.9	57.1	39.6	42.6	47.8

SOURCE: Earned Degrees Conferred Series, National Center for Education Statistics, 1947–48 – –1989–90; Journal of American Medical Association, Vo. 243, No. 9, March 1980, Vol. 25, December 25, 1981, No. 24, December 24/31, 1982, copyright by the American Medical Association; Review of Legal Education in the United States, Fall 1986, American Bar Association; and personal communication from the Association of American Medical Colleges, American Veterinary Medicine Association, American Optometry Association, American Podiatry Association and the American Pharmaceutical Association, 1989

TABLE 3-3

FIRST PROFESSIONAL DEGREES CONFERRED BY FIELD AND SEX, SELECTED YEARS 1947–48 THRU 1989–90

	MEDICINE			DENTISTRY			OPTOMETRY			OSTEOPATHY			PODIATRY		
YEAR	Total	Women	%W	Total	Women	%W	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W
1947–48	6,714	744	11.1	1,625	37	2.3	1,425	40	2.8						
1949–50	5,612	584	10.4	2,579	18	0.7	1,801	19	1.1	346	19	5.5			
1953–54	6,757	343	5.1	3,102	39	1.3	706	20	2.8	499	10	2.0			
1957–58	6,861	351	5.1	3,065	34	1.1	264	1	0.4	466	6	1.3			
1959–60	7,074	394	5.6	3,247	26	0.8	339	4	1.2	423	8	1.9			
1963–64	7,342	432	5.9	3,196	14	0.4	305	5	1.6	352	4	1.1			
1965–66	7,720	516	6.7	3,264	35	1.1	380	3	0.8	360	5	1.4	136	2	1.5
1970–71	8,986	829	9.2	3,777	46	1.2	531	13	2.4	472	11	2.3	241	5	2.1
1972–73	10,398	939	9.0	5,086	58	1.1	771	20	2.6	523	15	2.9	259	1	0.4
1974–75	12,550	1,654	13.2	4,809	149	3.1	792	40	5.1	665	35	5.3	353	4	1.1
1976–77	13,599	2,611	19.2	5,138	374	7.3	953	105	11.0	852	75	8.8	486	16	3.3
1978–79	14,925	3,452	23.1	5,488	652	11.9	1,046	136	13.0	1,065	167	15.7	572	41	7.2
1979–80	15,046	3,523	23.4	5,321	719	13.5	1,085	170	15.7	1,011	159	15.7	580	73	12.6
1980–81	15,505	3,833	24.7	5,460	788	14.4	1,097	207	18.9	1,145	188	16.4	597	69	11.6
1981–82	15,985	3,991	25.0	5,550	825	14.9	1,113	224	20.1	1,017	186	18.3	599	63	10.5
1982–83	15,728	4,193	26.7	5,371	838	15.6	1,120	246	22.0	1,317	261	19.8	631	79	12.5
1983–84	16,343	4,632	28.3	5,274	1,089	20.6	1,086	262	24.1	1,287	262	20.4	607	77	12.7
1984–85	16,041	4,874	30.4	5,339	1,106	20.7	1,115	303	27.2	1,489	353	23.7	582	118	20.3
1985–86	15,938	4,916	30.8	5,046	1,139	22.6	1,029	285	27.7	1,547	388	25.1	612	124	20.3
1986–87	15,620	5,054	32.4	4,741	1,138	24.0	1,082	385	35.6	1,618	412	25.5	590	122	20.7
1987–88	15,091	4,984	33.0	4,351	1,135	26.1	1,023	351	34.3	1,544	421	27.3	645	150	23.3
1988–89	15,454	5,128	33.2	4,247	1,108	26.1	1,093	410	37.5	1,635	453	27.7	636	149	23.4
1989–90	15,115	5,138	34.0	4,093	1,263	30.9	1,072	426	39.7	1,561	442	28.3	675	182	27.0

	VET. MEDICINE			LAW			THEOLOGY			CHIROPRACTIC			PHARMACY		
YEAR	Total	Women	%W	Total	Women	%W	Total	Women	%W	Total	Women	%W	Total	Women	%W
1947–48	242	13	5.4	10,990	420	3.8									
1949–50	803	12	1.5	14,312	421	2.9	3,221	211	6.6						
1953–54	803	10	1.2	9,298	322	3.5	4,463	119	2.7						
1957–58	809	13	1.6	9,394	272	2.9	4,989	61	1.2						
1959–60	825	18	2.2	9,240	230	2.5	5,184	87	1.7						
1963–64	852	32	3.8	10,679	307	2.9	4,423	65	1.5						
1965–66	922	52	5.6	13,246	470	3.5	4,124	74	1.8						
1970–71	1,252	98	7.8	17,652	1,293	7.3	5,055	118	2.3						
1972–73	1,299	133	10.2	27,484	2,224	8.1	5,291	182	3.4						
1974–75	1,415	225	15.9	29,497	4,455	15.1	5,098	348	6.8						
1976–77	1,586	362	22.8	34,104	7,657	22.5	5,861	554	9.5	1,368	116	8.5	527	145	27.5
1978–79	1,714	496	28.9	35,387	10,084	28.5	6,607	866	13.1	1,779	189	10.6	639	230	36.0
1979–80	1,852	615	33.2	35,855	10,828	30.2	7,012	1,009	14.4	2,061	250	12.1	637	239	37.5
1980–81	1,922	677	35.2	36,661	11,768	32.1	6,898	962	13.9	2,337	389	16.6	664	283	42.6
1981–82	1,886	668	35.4	35,543	11,607	32.7	6,091	1,084	17.8	2,626	469	17.9	625	260	41.6
1982–83	2,012	822	40.9	36,540	13,218	36.2	6,494	1,099	16.9	2,889	581	20.1	705	329	46.7
1983–84	2,138	877	41.0	37,012	13,630	36.8	6,878	1,205	17.5	3,105	704	22.7	709	377	53.2
1984–85	2,178	1,043	47.9	37,491	13,321	35.5	7,221	1,335	18.5	2,661	589	22.1	861	431	50.1
1985–86	2,270	1,079	47.5	35,844	13,970	39.0	7,283	1,418	19.5	3,395	841	24.8	903	471	52.2
1986–87	2,230	1,080	48.4	36,172	14,529	40.2	7,181	1,387	19.3	2,655	673	25.3	861	510	59.2
1987–88	2,235	1,118	50.0	35,469	14,345	40.4	6,474	1,386	21.4	2,632	669	25.4	951	568	59.7
1988–89	2,157	1,176	54.5	35,567	14,519	40.8	6,005	1,366	22.7	2,890	731	25.3	1,074	652	60.7
1989–90	2,160	1,259	58.3	36,437	15,378	42.2	5,851	1,445	24.7	2,581	675	26.2	1,191	709	59.5

SOURCE: Earned Degrees Conferred Series, 1983–90, National Center for Education Statistics

TABLE 3-4

FIRST PROFESSIONAL DEGREES BY FIELD, RACIAL GROUP AND SEX, 1990 AND CHANGE FROM 1987

FIELD	TOTAL			White non–Hispanic			Black non–Hispanic			Hispanic			Asian/Pacif Isl			Am Ind/Ala Nat			Foreign		
	Total*	Women	%W	Total	Women	%W	Total	Wom	%B	Total	Wom	%H	Total	Wom	%A	Total	Wom	%I	Total	Wom	%F
All Fields 1983	73,136	21,826	30	64,551	16,922	88	2,931	1,159	4.0	1,541	410	2.1	1,456	465	2.0	192	58	0.3	669	132	0.9
All Fields 1985	75,562	24,782	33	61,566	20,051	81	2,837	1,348	3.8	1,882	644	2.5	1,754	646	2.3	244	71	0.3	759	186	1.0
All Fields 1987	71,617	25,095	35	62,688	21,538	88	3,420	1,585	4.8	2,051	748	2.9	2,270	850	3.2	304	121	0.4	884	252	1.2
All Fields 1989	70,856	25,810	36	61,214	21,815	86	3,048	1,530	4.3	2,268	895	3.2	2,976	1,157	4.2	264	116	0.4	985	297	1.4
All Fields 1990	70,736	26,917	38	60,291	22,382	85	3,389	1,739	4.8	2,427	973	3.4	3,336	1,370	4.7	257	119	0.4	1,036	334	1.5
Dentistry	4,093	1,263	31	3,032	811	74	173	68	4.2	242	96	5.9	448	192	10.9	9	6	0.2	189	72	4.6
Medicine	15,115	5,138	34	12,127	3,919	80	887	463	5.9	554	196	3.7	1,351	484	8.9	52	22	0.3	144	54	1.0
Optometry	1,072	426	40	914	347	85	24	14	2.2	27	10	2.5	85	46	7.9	2	0	0.2	20	9	1.9
Osteopathic Med.	1,561	442	28	1,426	399	91	14	4	0.9	42	14	2.7	63	19	4.0	12	5	0.8	4	1	0.3
Pharmacy	1,191	709	60	824	481	69	38	25	3.2	38	24	3.2	229	144	19.2	5	0	0.4	57	35	4.8
Podiatry	675	182	27	552	133	82	54	25	8.0	22	7	3.3	40	13	5.9	1	1	0.1	6	3	0.9
Veterinary Med.	2,160	1,259	58	2,027	1,178	94	43	23	2.0	46	28	2.1	27	19	1.3	12	8	0.6	5	3	0.2
Chiropractic Med.	2,581	675	26	2,298	591	89	28	11	1.1	73	23	2.8	65	18	2.5	7	1	0.3	110	31	4.3
Law	36,437	15,378	42	32,187	13,278	88	1,718	956	4.7	1,275	558	3.5	858	419	2.4	142	72	0.4	257	95	0.7
Theology	5,851	1,445	25	4,904	1,245	84	410	132	7.0	108	17	1.8	170	16	2.9	15	4	0.3	244	31	4.2
Change From 1987																					
All Fields '89–87	−881	1822	3.0	−2397	844	−2.3	−31	154	0.0	376	225	0.6	1066	520	1.5	−47	−2	−0.1	152	82	0.2
Dentistry	−646	126	6.9	−824	−39	−7.3	−89	−7	−1.3	73	47	2.3	129	91	4.2	−4	4	−0.1	69	30	2.1
Medicine	−314	140	1.6	−1010	−215	−4.9	101	114	0.8	70	31	0.5	546	213	3.7	−14	−8	−0.1	−7	5	0.0
Optometry	−10	41	4.2	−29	29	−1.9	6	4	0.6	−2	1	−0.2	11	5	1.1	−2	−1	−0.2	6	3	0.6
Osteopathic Med.	−57	30	2.9	−72	33	−1.2	−12	−15	−0.7	17	6	1.1	18	5	1.3	−1	2	0.0	−7	−1	−0.4
Pharmacy	330	199	0.3	293	186	7.5	−74	−50	−9.8	−4	−2	−1.7	119	61	6.5	−1	0	−0.3	−3	4	−2.2
Podiatry	84	59	6.2	31	35	−6.4	21	10	2.4	11	4	1.4	28	9	3.9	−1	1	−0.2	−6	0	−1.1
Veterinary Med.	−70	179	9.9	−25	161	1.8	14	6	0.7	−44	11	−1.9	3	6	0.2	−19	−7	−0.8	1	2	0.1
Chiropractic Med.	88	46	0.9	0	16	−3.1	2	1	0.0	34	12	1.3	35	13	1.3	3	0	0.1	14	4	0.4
Law	381	883	2.0	−55	564	−1.1	−17	43	−0.1	221	114	0.6	164	116	0.4	−10	4	0.0	78	40	0.2
Theology	−667	119	4.4	−706	73	−2.3	17	48	1.0	0	1	0.2	13	−1	0.5	2	3	0.1	7	−5	0.5

* Includes those whose race/ethnicity could not be imputed.

SOURCE: Race/Ethnicity Trends in Degrees Conferred by Institutions of Higher Education: 1978–79 through 1988–89, National Center for Education Statistics, January 1991.

TABLE 3-5

FIRST PROFESSIONAL DEGREES BY FIELD, RACIAL GROUP AND SEX, 1978–89 THROUGH 1988–89

Year	TOTAL			Dentistry (D.D.S or D.M.D.)			Medicine (M.D.)			Optometry (O.D.)			Osteopathic Med (D.O.)		
	Total	Women	%*	Total	Wom	%*	Total	Wom	%*	Total	Wom	%*	Total	Wom	%*
All Graduates															
1978–79	68,503	16170	23.6	5,434	640	11.8	14,786	3,405	23.0	1,046	136	13.0	1,065	167	15.7
1980–81	71,340	19146	26.8	5,460	788	14.4	15,505	3,833	24.7	1,097	207	18.9	1,145	188	16.4
1984–85	71,057	23556	33.2	4,732	988	20.9	14,972	4,609	30.8	1,114	302	27.1	1,489	353	23.7
1986–87	71,617	25095	35.0	4,739	1,137	24.0	15,429	4,998	32.4	1,082	385	35.6	1,618	412	25.5
1988–89	70,758	25691	36.3	4,247	1,108	26.1	15,454	5,128	33.2	1,093	410	37.5	1,635	452	27.6
White, Non–Hispanic															
1978–79	62,430	14307	91.1	4,901	520	90.2	13,205	2,906	89.3	968	117	92.5	1,013	157	95.1
1980–81	64,551	16922	90.5	4,896	639	89.7	13,723	3,263	88.5	1,017	174	92.7	1,091	173	95.3
1984–85	63,219	20589	89.0	4,028	761	85.1	12,915	3,864	86.3	979	257	87.9	1,400	327	94.0
1986–87	62,687	21538	87.5	3,856	850	81.4	13,137	4,134	85.1	943	318	87.2	1,497	365	92.5
1988–89	61,188	21740	86.5	3,280	765	77.2	12,790	4,064	82.8	936	330	85.6	1,465	400	89.6
Black, Non–Hispanic															
1978–79	2,836	1053	4.1	180	55	3.3	762	269	5.2	12	4	1.1	18	6	1.7
1980–81	2,931	1159	4.1	195	69	3.6	769	324	5.0	9	6	0.8	16	5	1.4
1984–85	3,029	1406	4.3	177	76	3.7	730	331	4.9	14	7	1.3	29	11	1.9
1986–87	3,420	1585	4.8	262	93	5.5	786	349	5.1	18	10	1.7	26	19	1.6
1988–89	3,101	1493	4.4	179	78	4.2	779	399	5.0	30	14	2.7	41	14	2.5
Hispanic															
1978–79	1,283	294	1.9	85	15	1.6	324	81	2.2	8	0	0.8	10	2	0.9
1980–81	1,541	410	2.2	86	17	1.6	395	90	2.5	16	3	1.5	13	2	1.1
1984–85	1,884	645	2.7	123	33	2.6	479	152	3.2	28	8	2.5	18	5	1.2
1986–87	2,051	748	2.9	169	49	3.6	484	165	3.1	29	9	2.7	25	8	1.5
1988–89	2,254	887	3.2	201	67	4.7	565	196	3.7	27	15	2.5	58	19	3.5
Asian or Pacific Islander															
1978–79	1,195	345	1.7	194	36	3.6	369	108	2.5	45	12	4.3	13	0	1.2
1980–81	1,456	465	2.0	204	45	3.7	446	117	2.9	40	19	3.6	14	6	1.2
1984–85	1,816	664	2.6	289	89	6.1	583	192	3.9	77	26	6.9	31	8	2.1
1986–87	2,270	850	3.2	319	101	6.7	805	271	5.2	74	41	6.8	45	14	2.8
1988–89	2,967	1156	4.2	418	134	9.8	1,147	405	7.4	79	42	7.2	55	15	3.4
American Indian/Alaskan Native															
1978–79	216	66	0.3	23	2	0.4	38	13	0.3	0	0	0.0	8	2	0.8
1980–81	192	58	0.3	10	1	0.2	51	12	0.3	2	1	0.2	8	1	0.7
1984–85	248	72	0.3	31	9	0.7	89	25	0.6	2	1	0.2	8	2	0.5
1986–87	304	121	0.4	13	2	0.3	66	30	0.4	4	1	0.4	13	3	0.8
1988–89	268	119	0.4	13	6	0.3	61	30	0.4	4	1	0.4	9	1	0.6
Nonresident Alien															
1978–79	533	105	0.8	51	12	0.9	88	28	0.6	13	3	1.2	3	0	0.3
1980–81	669	132	0.9	69	17	1.3	121	27	0.8	13	4	1.2	3	1	0.3
1984–85	861	180	1.2	84	20	1.8	176	45	1.2	14	3	1.3	3	0	0.2
1986–87	884	252	1.2	120	42	2.5	151	49	1.0	14	6	1.3	11	2	0.7
1988–89	980	296	1.4	156	58	3.7	112	34	0.7	17	8	1.6	7	3	0.4

* For All Graduates, percent is women as % of total. For all others, it is race/ethnicity as % of total.

TABLE 3-5 (continued)

FIRST PROFESSIONAL DEGREES BY FIELD, RACIAL GROUP AND SEX, 1978–89 THROUGH 1988–89 (continued)

Year	Pharmacy (D. Phar.)			Podiatry PodD, DP, DPM			Veterinary Med. (D.V.M.)			Chiropractic (D.C. or D.C.M.)			Law, General (LL.B. or J.D.)			Theological Profs, General		
	Total	Wom	%*	Total	Wom	%*	Total	Wom	%*	Total	Wom	%*	Total	Women	%*	Total	Wom	%*
All Fields, Total																		
1978–79	639	230	36.0	572	41	7.2	1,714	496	28.9	1,671	173	10.4	35,206	10026	28.5	6,370	856	13.4
1980–81	664	283	42.6	597	69	11.6	1,922	677	35.2	2,337	389	16.6	36,331	11768	32.4	6,282	944	15.0
1984–85	648	318	49.1	582	118	20.3	2,177	1043	47.9	2,661	589	22.1	36,048	13928	38.6	6,585	1291	19.6
1986–87	861	510	59.2	591	123	20.8	2,230	1080	48.4	2,493	629	25.2	36,056	14495	40.2	6,518	1326	20.3
1988–89	1,074	652	60.7	636	149	23.4	2,157	1176	54.5	2,890	731	25.3	35,567	14519	40.8	6,005	1366	22.7
White, Non–Hispanic																		
1978–79	470	164	73.6	543	37	94.9	1,628	465	95.0	1,613	166	96.5	32,334	8988	91.8	5,755	787	90.3
1980–81	471	195	70.9	552	57	92.5	1,846	642	96.0	2,144	357	91.7	33,109	10545	91.1	5,702	877	90.8
1984–85	456	213	70.4	517	92	88.8	2,072	994	95.2	2,483	551	93.3	32,637	12369	90.5	5,684	1144	86.3
1986–87	531	295	61.7	521	98	88.2	2,052	1017	92.0	2,298	575	92.2	32,242	12714	89.4	5,610	1172	86.1
1988–89	735	446	68.4	541	114	85.1	2,029	1105	94.1	2,614	656	90.4	31,679	12668	89.1	5,119	1192	85.2
Black, Non–Hispanic																		
1978–79	16	10	2.5	15	2	2.6	37	18	2.2	7	2	0.4	1,500	645	4.3	289	42	4.5
1980–81	20	12	3.0	20	7	3.4	37	21	1.9	13	2	0.6	1,576	671	4.3	276	42	4.4
1984–85	30	14	4.6	35	18	6.0	36	22	1.7	22	9	0.8	1,561	828	4.3	395	90	6.0
1986–87	112	75	13.0	33	15	5.6	29	17	1.3	26	10	1.0	1,735	913	4.8	393	84	6.0
1988–89	51	32	4.7	40	19	6.3	32	21	1.5	24	9	0.8	1,586	816	4.5	339	91	5.6
Hispanic																		
1978–79	7	1	1.1	4	1	0.7	14	3	0.8	19	1	1.1	728	185	2.1	84	5	1.3
1980–81	19	8	2.9	12	2	2.0	11	4	0.6	24	3	1.0	899	278	2.5	66	3	1.1
1984–85	12	7	1.9	10	5	1.7	34	14	1.6	42	8	1.6	1,019	398	2.8	119	15	1.8
1986–87	42	26	4.9	11	3	1.9	90	17	4.0	39	11	1.6	1,054	444	2.9	108	16	1.7
1988–89	31	17	2.9	15	3	2.4	44	19	2.0	73	18	2.5	1,146	510	3.2	94	23	1.6
Asian or Pacific Islander																		
1978–79	112	42	17.5	7	1	1.2	10	1	0.6	20	2	1.2	380	139	1.1	45	4	0.7
1980–81	115	52	17.3	8	2	1.3	17	6	0.9	22	1	0.9	530	208	1.5	60	9	1.0
1984–85	96	61	14.8	15	3	2.6	20	8	0.9	31	6	1.2	588	265	1.6	86	6	1.3
1986–87	110	83	12.8	12	4	2.0	24	13	1.1	30	5	1.2	694	301	1.9	157	17	2.4
1988–89	210	130	19.6	18	7	2.8	29	22	1.3	52	15	1.8	793	367	2.2	166	19	2.8
American Indian/Alaskan Native																		
1978–79	1	0	0.2	0	0	0.0	15	7	0.9	6	1	0.4	121	41	0.3	4	0	0.1
1980–81	3	1	0.5	1	1	0.2	4	2	0.2	3	2	0.1	101	33	0.3	9	4	0.1
1984–85	1	0	0.2	2	0	0.3	6	1	0.3	6	2	0.2	99	30	0.3	4	2	0.1
1986–87	6	0	0.7	2	0	0.3	31	15	1.4	4	1	0.2	152	68	0.4	13	1	0.2
1988–89	2	1	0.2	2	0	0.3	14	6	0.6	4	0	0.1	146	65	0.4	13	9	0.2
Nonresident Alien																		
1978–79	33	13	5.2	3	0	0.5	10	2	0.6	6	1	0.4	133	28	0.4	193	18	3.0
1980–81	36	15	5.4	4	0	0.7	7	2	0.4	131	24	5.6	116	33	0.3	169	9	2.7
1984–85	53	23	8.2	3	0	0.5	9	4	0.4	77	13	2.9	144	38	0.4	297	34	4.5
1986–87	60	31	7.0	12	3	2.0	4	1	0.2	96	27	3.9	179	55	0.5	237	36	3.6
1988–89	45	26	4.2	20	6	3.1	9	3	0.4	123	33	4.3	217	93	0.6	274	32	4.6

* For All Graduates, percent is women as % of total. For all others, it is race/ethnicity as % of total.

SOURCE: Earned Degrees Conferred Series, 1970–90, National Center for Education Statistics

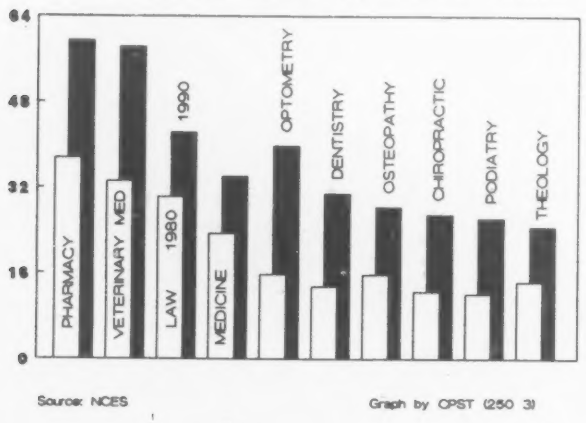
TABLE 3-6

ARCHITECTURE AND ENVIRONMENTAL DESIGN DEGREES BY SEX AND LEVEL 1970–71 – 1989–90

YEAR	BACHELORS			MASTERS			DOCTORATES		
	Total	Women	%Wom	Total	Women	%Wom	Total	Women	%Wom
1970–71	5,578	667	12.0	1,724	243	14.1	36	3	8.3
1971–72	6,452	775	12.0	1,928	281	14.6	50	7	14.0
1972–73	6,980	923	13.2	2,319	364	15.7	58	4	6.9
1973–74	7,840	1,164	14.8	2,733	502	18.4	69	4	5.8
1974–75	8,238	1,435	17.4	2,953	599	20.3	69	11	15.9
1975–76	9,169	1,757	19.2	3,215	670	20.8	82	13	15.9
1976–77	9,222	1,973	21.4	3,213	724	22.5	73	11	15.1
1977–78	9,266	2,199	23.7	3,121	812	26.0	73	16	21.9
1978–79	9,297	2,401	25.8	3,124	889	28.5	96	22	22.9
1979–80	9,176	2,548	27.8	3,157	900	28.5	79	13	16.5
1980–81	9,455	2,655	28.1	3,153	919	29.1	93	20	21.5
1981–82	9,728	2,903	29.8	3,327	1,085	32.6	80	22	27.5
1982–83	9,823	3,420	34.8	3,357	1,133	33.8	97	23	23.7
1983–84	9,186	3,291	35.8	3,223	1,026	31.8	84	22	26.2
1984–85	9,325	3,306	35.5	3,275	1,127	34.4	89	23	25.8
1985–86	9,119	3,295	36.1	3,260	1,131	34.7	73	17	23.3
1986–87	8,922	3,333	37.3	3,142	1,069	34.0	92	26	28.3
1987–88	8,608	3,329	38.7	3,159	1,117	35.4	98	32	32.7
1988–89	9,150	3,605	39.3	3,383	1,191	35.1	86	23	26.7
1989–90	9,261	3,624	39.1	3,492	1,271	36.4	97	28	28.9
TOTALS	173,795	48,603	28.0	60,258	17,053	28.3	1,574	340	21.6

CHART 3-1

PERCENT WOMEN EARNING FIRST PROFESSIONAL DEGREES, 1980 & 1990



Source: NCES

Graph by CPST (250 3)

FIELDS: Accounting and Business and Management

SOURCE: Earned Degrees Conferred, 1971 thru 1990, Center for Education Statistics

TABLE 3-7

DEGREES IN ACCOUNTING BY SEX AND LEVEL OF DEGREE
1971–72 – 1989–90

	BACHELORS			MASTERS			DOCTORS		
		Women			Women			Women	
YEAR	Total	No.	%	Total	No.	%	Total	No.	%
1971–72	24,801	2,494	10.1	1,377	108	7.8	51	0	0.0
1972–73	28,289	3,325	11.8	1,627	141	8.7	83	1	1.2
1973–74	29,770	4,176	14.0	1,806	189	10.5	70	4	5.7
1974–75	31,605	5,665	17.9	2,232	280	12.5	60	4	6.7
1975–76	35,806	7,645	21.4	2,730	478	17.5	55	5	9.1
1976–77	39,183	9,942	25.4	3,278	636	19.4	53	4	7.5
1977–78	40,856	12,047	29.5	3,389	729	21.5	44	3	6.8
1978–79	42,131	13,754	32.6	3,595	833	23.2	52	7	13.5
1979–80	43,556	15,760	36.2	3,496	965	27.6	51	9	17.6
1980–81	43,344	17,046	39.3	3,449	1,034	30.0	56	8	14.3
1981–82	45,542	19,329	42.4	3,246	1,086	33.5	61	8	13.1
1982–83	45,732	20,771	45.4	3,046	1,049	34.4	66	13	19.7
1983–84	47,692	22,416	47.0	3,297	1,207	36.6	53	17	32.1
1984–85	47,005	23,050	49.0	3,207	1,259	39.3	59	13	22.0
1985–86	45,617	22,973	50.4	3,101	1,210	39.0	53	15	28.3
1986–87	43,813	22,546	51.5	2,920	1,195	40.9	61	17	27.9
1987–88	43,813	22,546	51.5	2,920	1,195	40.9	61	17	27.9
1988–89	43,813	22,546	51.5	2,920	1,195	40.9	61	17	27.9
1989–90	43,990	23,359	53.1	3,265	1,450	44.4	60	26	43.3
TOTALS	766,358	291,390	38.0	54,901	16,239	29.6	1,110	188	16.9

FIELD: Business and Management

SOURCE: Earned Degrees Confered, 1971 through 1990, National Center for Education Statistics

TABLE 3-8

DEGREES IN BUSINESS AND MANAGEMENT BY SEX AND LEVEL,
1970–71 – 1989–90

	BACHELORS			MASTERS			DOCTORATES		
		Women			Women			Women	
YEAR	Total	No.	%W	Total	No.	%W	Total	No.	%W
1970–71	116,709	10,803	9.3	26,654	1,045	3.9	810	23	2.8
1971–72	123,306	11,966	9.7	30,511	1,207	4.0	902	20	2.2
1972–73	128,244	13,840	10.8	31,239	1,522	4.9	932	53	5.7
1973–74	133,905	17,481	13.1	32,820	2,161	6.6	983	50	5.1
1974–75	135,455	22,223	16.4	36,450	3,080	8.4	1011	41	4.1
1975–76	145,035	28,783	19.8	42,728	4,974	11.6	956	52	5.4
1976–77	152,088	35,583	23.4	46,545	6,664	14.3	869	55	6.3
1977–78	163,274	44,604	27.3	48,661	8,216	16.9	867	72	8.3
1978–79	175,420	53,875	30.7	50,646	9,698	19.1	863	101	11.7
1979–80	189,224	63,883	33.8	55,322	12,355	22.3	796	115	14.4
1980–81	200,876	73,806	36.7	58,018	14,513	25.0	845	125	14.8
1981–82	215,817	84,718	39.3	61,428	17,069	27.8	857	152	17.7
1982–83	220,078	90,606	41.2	65,245	18,838	28.9	809	136	16.8
1983–84	222,753	95,325	42.8	66,594	20,062	30.1	976	201	20.6
1984–85	225,513	100,110	44.4	67,461	20,869	30.9	864	146	16.9
1985–86	230,784	103,947	45.0	66,967	20,795	31.1	965	206	21.3
1986–87	233,719	106,969	45.8	67,353	22,216	33.0	1098	259	23.6
1987–88	235,476	108,087	45.9	69,430	23,246	33.5	1108	255	23.0
1988–89	238,699	109,828	46.0	72,961	24,517	33.6	1150	306	26.6
1989–90	238,699	109,828	46.0	72,961	24,517	33.6	1150	306	26.6
TOTALS	3,725,074	1,286,265	34.5	1,069,994	257,564	24.1	18,811	2,674	14.2

Field: Business and Management
Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 3-9
BUSINESS AND MANAGMENT PhDs BY SEX AND RACE/ETHNICITY, 1985 – 1991
(U.S. Citizens Only)

Year	Total	Men	Wom	%Wom	White		Black		Hispanic		Indian		Asian		%Min
					Men	Women	Men	Wom	Men	Wom	Men	Wom	Men	Wom	
1985	514	399	115	22.4	376	105	4	4	4	1	1	1	8	2	4.9
1986	557	385	172	30.9	350	157	9	5	6	1	0	3	13	4	7.4
1987	599	407	192	32.1	382	177	8	8	4	2	1	2	7	1	5.5
1988	612	420	192	31.4	384	177	7	9	3	1	4	0	12	4	6.5
1989	664	440	224	33.7	404	215	9	4	6	1	1	0	11	4	5.4
1990	588	370	218	37.1	340	205	6	5	7	3	3	0	10	3	6.3
1991	669	441	228	34.1	409	211	8	6	5	2	1	1	13	6	6.3

FIELD: Law
SOURCE: A Review of Legal Education in the United States – Fall 1977, Fall 1987 and Fall 1990, American Bar Association, Section of Legal Education and Admissions to the Bar

TABLE 3-10
FIRST YEAR AND TOTAL ENROLLMENTS IN ABA APPROVED LAW SCHOOLS BY SEX AND ETHNICITY, SELECTED YEARS, 1970 – 1991

Fall Year	Total	Women		Black		Hispanic*		Asian/Pacific Islander		Am. Indian/ Alaskan Nativ	
		No.	%	No.	%	No.	%	No.	%	No.	%
First Year											
1970	29,128	2,103	7.2	1,115	3.83	309	1.06			44	0.15
1980	40,717	13,490	33.1	2,002	4.92	1,075	2.64	577	1.42	171	0.42
1985	40,747	16,236	39.8	2,214	5.43	1,276	3.13	766	1.88	173	0.42
1990	43,826	18,722	42.7	2,628	6.00	1,830	4.18	1,501	3.42	220	0.50
1991	44,104	18,592	42.2	2,982	6.76	1,974	4.48	1,753	3.97	224	0.51
Totals	198,522	69,143	34.8	10,941	5.51	6,464	3.26	4,597	2.32	832	0.42
Total Enrollments											
1970	68,386	4,715	6.9	2,128	3.11	548	0.80			72	0.11
1980	122,860	38,627	31.4	5,257	4.28	2,817	2.29	1,547	1.26	392	0.32
1985	125,698	48,499	38.6	5,955	4.74	3,507	2.79	2,062	1.64	429	0.34
1990	129,698	54,829	42.3	6,791	5.24	4,733	3.65	3,676	2.83	527	0.41
1991	132,433	55,818	42.1	7,432	5.61	5,038	3.80	4,306	3.25	554	0.42
Totals	579,075	202,488	35.0	27,563	4.76	16,643	2.87	11,591	2.00	1,974	0.34

* Excludes three ABA–approved law schools in Puerto Rico

SOURCE: Earned Degrees Conferred, 1972 through 1990, National Center for Education Statistics

TABLE 3-10A
LAW DEGREES BY SEX AND LEVEL OF DEGREE, 1970–71 THRU 1989–90

YEAR	BACHELORS			MASTERS			DOCTORATES			1st PROFESSIONAL		
	Total	Women		Total	Women		Total	Women		Total	Women	
		No.	%		No.	%		No.	%		No.	%
1970–71	545	27	5.0	955	46	4.8	20	0	0.0	17,652	1,293	7.3
1975–76	531	100	18.8	1,442	173	12.0	76	3	3.9	32,535	6,264	19.3
1980–81	776	388	50.0	1,832	326	17.8	60	4	6.7	36,661	11,768	32.1
1985–86	1,197	778	65.0	1,924	483	25.1	54	6	11.1	35,844	13,970	39.0
1986–87	1,178	808	68.6	1,943	520	26.8	120	41	34.2	36,172	14,529	40.2
1987–88	1,303	890	68.3	1,880	494	26.3	89	23	25.8	35,469	14,345	40.4
1988–89	1,976	1,191	60.3	2,098	607	28.9	76	30	39.5	35,567	14,519	40.8
1989–90	1,582	1,072	67.8	1,869	558	29.9	113	23	20.4	36,437	15,378	42.2
TOTALS	9,088	5,254	57.8	13,943	3,207	23.0	608	130	21.4	266,337	92,066	34.6

SOURCE: Office of Personnel Management, unpublished tabulations

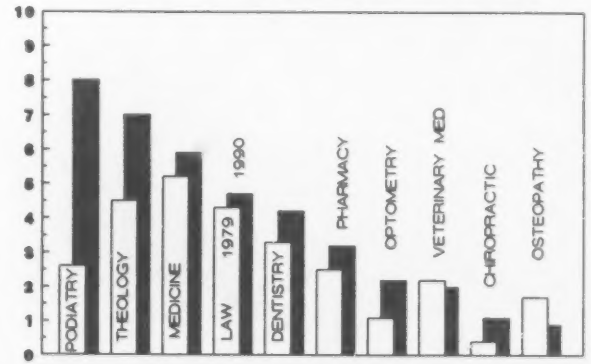
TABLE 3-11

FEDERAL WORKERS EMPLOYED IN LEGAL AND KINDRED OCCUPATIONS BY OCCUPATION TITLE, SEX AND MINORITY STATUS, SEPTEMBER 30, 1991

	ALL EMPLOYEES			TOTAL MINORITY				BLACK		HISPANIC		ASIAN		AM. INDIAN		WHITE	
OCCUPATIONAL TITLE	TOTAL	WOMEN	% W	TOTAL	%	WOM	% W	No.	% B	No.	% H	No.	% A	No.	% I	No.	% W
Law Clerk	471	242	51.4	94	20.0	49	52.1	54	11.5	23	4.9	15	3.2	2	0.4	377	80.0
General Attorney	24,260	8,577	35.4	2,656	10.9	1221	46.0	1,608	6.6	654	2.7	328	1.4	66	0.3	21,604	89.1
Administrative Law Judge	1,189	82	6.9	76	6.4	14	18.4	33	2.8	35	2.9	3	0.3	5	0.4	1,113	93.6
Patent Administration	68	5	7.4	5	7.4	1	20.0	2	2.9	1	1.5	2	2.9	0	0.0	63	92.6
Patent Adviser	38	6	15.8	1	2.6	0	0.0	1	2.6	0	0.0	0	0.0	0	0.0	37	97.4
Patent Attorney	234	15	6.4	8	3.4	2	25.0	4	1.7	1	0.4	2	0.9	1	0.4	226	96.6
Patent Classifying	81	18	22.2	22	27.2	10	45.5	8	9.9	1	1.2	12	14.8	1	1.2	59	72.8
Patent Examining	1,830	373	20.4	475	26.0	130	27.4	170	9.3	38	2.1	265	14.5	2	0.1	1,355	74.0
Design Patent Examining	39	19	48.7	12	30.8	7	58.3	8	20.5	0	0.0	4	10.3	0	0.0	27	69.2
TOTALS	28,210	9,337	33.1	3,349	11.9	1434	42.8	1,888	6.7	753	2.7	631	2.2	77	0.3	24,861	88.1

CHART 3-2

PERCENT BLACKS EARNING FIRST PROFESSIONAL DEGREES, 1979 & 1990

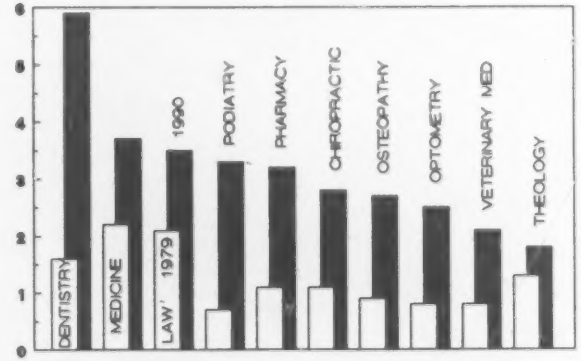


Source: NCES

Graph by OPST (372-3)

CHART 3-3

PERCENT HISPANICS EARNING FIRST PROFESSIONAL DEGREES, 1979 & 1990



Source: NCES

Graph by OPST (372A-3)

SOURCE: U.S. Department of Education, *Digest of Education Statistics, 1989*

TABLE 4-1

YEARS OF SCHOOL COMPLETED BY PERSONS AGE 18 AND OVER, BY AGE, SEX, AND RACE/ETHNICITY, 1988

[in thousands]

Age, sex, and race	Total population	Elementary level		High school		College		
		Less than 8 years	8 years	1 to 3 years	4 years	1 to 3 years	4 years	5 years or more
1	2	3	4	5	6	7	8	9
Total								
18 and over	177,677	10,876	8,403	22,464	70,194	32,932	19,622	13,186
18 and 19 years old	7,221	88	132	2,610	3,453	935	3	—
20 to 24 years old	18,840	446	312	2,041	7,801	6,213	1,749	277
25 years old and over	151,616	10,341	7,959	17,813	58,940	25,784	17,870	12,911
25 to 29 years old	21,523	502	330	2,205	9,093	4,514	3,483	1,397
30 to 34 years old	21,446	635	288	1,877	8,796	4,554	3,345	1,951
35 to 39 years old	18,854	697	285	1,523	7,162	4,164	2,772	2,251
40 to 49 years old	26,604	1,203	735	2,854	11,345	5,261	3,636	3,571
50 to 59 years old	21,870	1,673	1,285	3,080	8,943	3,047	2,049	1,793
60 to 69 years old	20,595	2,212	1,888	3,309	8,039	2,475	1,499	1,174
70 years old and over	18,724	3,417	3,148	2,967	5,562	1,769	1,066	773
Men								
18 and over	84,776	5,429	3,824	10,724	31,143	15,439	10,311	7,905
18 and 19 years old	3,581	54	79	1,439	1,621	387	1	—
20 to 24 years old	9,254	250	145	1,067	3,848	2,999	786	159
25 years old and over	71,941	5,125	3,600	8,217	25,674	12,053	9,525	7,746
25 to 29 years old	10,669	266	154	1,190	4,375	2,166	1,733	764
30 to 34 years old	10,651	349	115	1,028	4,219	2,112	1,736	1,091
35 to 39 years old	9,321	372	147	705	3,266	2,045	1,497	1,289
40 to 49 years old	13,959	618	377	1,287	4,946	2,516	1,982	2,233
50 to 59 years old	10,485	881	688	1,318	3,757	1,461	1,180	1,199
60 to 69 years old	9,478	1,123	860	1,551	3,159	1,099	909	759
70 years old and over	7,377	1,496	1,239	1,139	1,952	654	488	410
Women								
18 and over	92,902	5,444	4,579	11,743	39,051	17,494	9,308	5,284
18 and 19 years old	3,640	34	53	1,171	1,832	549	1	—
20 to 24 years old	9,586	194	167	974	3,953	3,213	963	119
25 years old and over	79,676	5,216	4,359	9,597	33,266	13,731	8,345	5,165
25 to 29 years old	10,854	216	176	1,015	4,718	2,348	1,750	633
30 to 34 years old	10,795	286	173	849	4,577	2,442	1,607	860
35 to 39 years old	9,533	325	138	818	3,896	2,119	1,275	962
40 to 49 years old	14,645	585	358	1,567	6,399	2,745	1,654	1,338
50 to 59 years old	11,385	792	597	1,762	5,186	1,586	869	594
60 to 69 years old	11,117	1,089	1,008	1,758	4,860	1,376	590	415
70 years old and over	11,347	1,921	1,909	1,828	3,610	1,115	600	363
White								
18 and over	152,644	8,299	7,262	18,119	61,090	28,640	17,402	11,833
18 and 19 years old	5,927	72	95	2,036	2,905	817	3	—
20 to 24 years old	15,625	389	245	1,563	6,390	5,224	1,557	259
25 years old and over	131,092	7,839	6,923	14,520	51,795	22,599	15,842	11,574
25 to 29 years old	18,070	437	269	1,710	7,637	3,764	3,031	1,222
30 to 34 years old	18,078	531	236	1,431	7,415	3,857	2,922	1,686
35 to 39 years old	16,059	582	226	1,142	6,073	3,598	2,421	2,016
40 to 49 years old	24,683	942	595	2,240	9,857	4,624	3,197	3,228
50 to 59 years old	19,001	1,247	1,091	2,465	8,055	2,730	1,824	1,589
60 to 69 years old	18,306	1,550	1,617	2,830	7,465	2,350	1,413	1,085
70 years old and over	16,894	2,552	2,887	2,702	5,294	1,678	1,034	747
Black								
18 and over	19,549	2,067	961	3,877	7,541	3,173	1,227	702
18 and 19 years old	1,043	15	30	486	432	79	—	—
20 to 24 years old	2,576	49	61	424	1,195	712	125	9
25 years old and over	15,930	2,003	870	2,966	5,914	2,382	1,102	693
25 to 29 years old	2,701	26	48	444	1,279	573	254	78
30 to 34 years old	2,571	76	37	397	1,167	532	248	113
35 to 39 years old	2,122	71	38	336	931	432	196	119
40 to 49 years old	2,913	174	119	557	1,216	455	201	190
50 to 59 years old	2,250	345	165	561	708	234	120	118
60 to 69 years old	1,861	575	227	442	421	95	49	52
70 years old and over	1,512	736	236	229	194	61	34	23
Hispanic origin [1]								
18 and over	12,605	3,067	903	2,108	3,854	1,696	702	373
18 and 19 years old	690	45	33	304	260	48	—	—
20 to 24 years old	1,975	247	88	389	780	390	66	12
25 years old and over	9,940	2,775	682	1,415	2,813	1,258	634	361
25 to 29 years old	2,044	327	90	353	701	342	165	95
30 to 34 years old	1,741	359	74	243	538	305	150	70
35 to 39 years old	1,553	372	71	217	495	229	97	73
40 to 49 years old	1,857	519	124	282	553	215	106	79
50 to 59 years old	1,322	498	132	180	297	98	70	50
60 to 69 years old	852	376	98	118	156	55	31	17
70 years old and over	571	324	93	42	74	16	15	8

SOURCE: "Educational Attainment in the United States", various years, Current Population Reports, Series P–20, U.S. Dept. of Commerce Bureau of Census and "The Condition of Ecucation 1989" Vo. 2, National Center for Education Statistics, (CS 8 9–651)

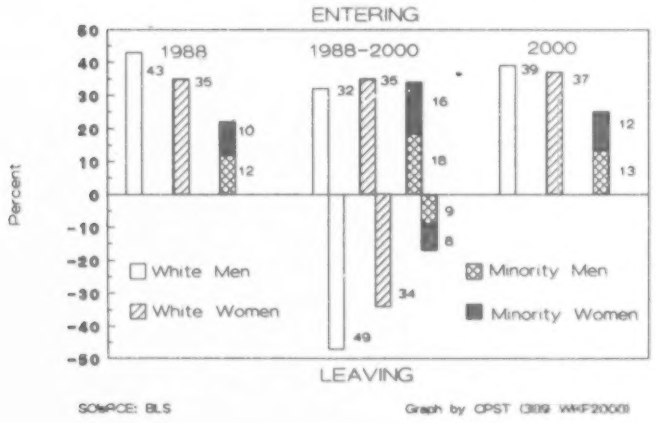
TABLE 4-2

PERCENT OF POPULATION 25–34 WHO HAVE COMPLETED ONE OR MORE YEARS OF COLLEGE BY RACE/ETHNICITY, 1970–1989

	One or More Years				Two of More Years				Four or More Years			
Year	All	White	Black	Hispanic	All	White	Black	Hispanic	All	White	Black	Hispanic
1970	29.8	31.2	15.0		24.3	25.4	11.2		15.8	16.6	6.1	
1971	31.3	32.8	16.3		25.2	25.5	12.2		16.3	17.2	6.3	
1972	33.1	34.8	18.7		27.0	28.2	13.9		17.9	18.8	7.9	
1973	34.2	35.5	20.4		27.8	29.0	14.6		18.2	19.0	7.9	
1974	37.4	38.7	23.0	18.7	30.7	32.0	16.0	13.8	20.4	21.0	8.1	5.7
1975	39.4	40.4	25.9	19.6	32.2	33.2	19.4	13.5	21.4	22.2	10.7	7.0
1976	41.3	42.7	24.9	20.9	33.8	35.0	18.9	14.7	22.6	23.5	11.3	7.4
1977	43.6	45.1	28.6	21.9	35.9	37.3	21.1	15.3	23.8	25.0	11.4	6.9
1978	44.8	46.1	32.6	22.7	36.8	38.1	24.1	16.9	23.6	24.8	11.4	8.8
1979	45.5	47.0	31.3	23.1	37.6	38.7	23.7	17.1	23.8	24.9	12.8	7.8
1980	45.8	47.2	33.6	23.6	36.8	38.9	24.9	17.8	24.1	25.4	12.4	8.9
1981	44.9	45.9	34.1	24.4	37.4	37.8	26.5	17.8	23.2	24.3	11.7	8.8
1982	45.2	46.2	35.8	23.8	38.4	38.4	27.3	18.7	23.8	24.9	12.6	9.7
1983	46.2	47.3	33.0	24.7	38.4	39.5	25.3	19.4	24.4	25.5	13.6	10.2
1984	45.7	47.1	32.8	26.0	37.7	39.1	24.7	19.7	24.3	25.5	13.1	10.1
1985	45.8	46.8	35.3	25.6	37.8	38.7	28.0	19.5	23.8	24.8	13.7	10.5
1986	45.7	46.6	36.2	24.9	37.0	38.9	28.5	19.5	24.0	25.1	13.6	9.9
1987	45.4	46.3	35.0	27.1	37.8	38.7	26.6	21.2	23.9	25.1	12.3	9.8
1988	44.8	45.6	34.1	29.0	37.4	38.1	26.9	22.5	23.7	24.5	13.1	11.9

CHART 4-1

WORKFORCE 2000



SOURCE: Digest of Education Statistics, 1990, National Center for Education Statistics

TABLE 4-3

YEARS OF SCHOOL COMPLETED BY PERSONS AGE 25 AND OVER AND 25 TO 29, BY RACE: 1910 TO 1989

Age & Date	Percent by Years of School Completed			Median School Years Completed	Percent by Years of School Completed			Median School Years Completed	Percent by Years of School Completed			Median School Years Completed
	Less Than 5 Years of Elementary School	4 Years of High School or More	4 or More Years of College		Less Than 5 Years of Elementary School	4 Years of High School or More	4 or More Years of College		Less Than 5 Years of Elementary School	4 Years of High School or More	4 or More Years of College	
	All Races				White[2]				Black and Other Races			
	25 and Over				25 and Over				25 and Over			
1910[1]	23.8	13.5	2.7	8.1								
1920[1]	22.0	16.4	3.3	8.2								
1930[1]	17.5	19.1	3.9	8.4								
1940	13.7	24.5	4.6	8.6	10.9	26.1	4.9	8.7	41.8	7.7	1.3	5.7
1950	11.1	34.3	6.2	9.3	8.9	36.4	6.6	9.7	32.6	13.7	2.2	6.9
1960	8.3	41.1	7.7	10.5	6.7	43.2	8.1	10.8	23.5	21.7	3.5	8.2
1970	5.3	22.0	11.0	12.2	4.2	57.4	11.6	12.2	14.7	36.1	6.1	10.1
1975	4.2	30.2	13.9	12.3	3.3	64.5	14.5	12.4	11.7	46.4	9.2	11.4
1980	3.4	35.6	17.0	12.5	2.6	70.5	17.8	12.5	8.8	54.6	11.1	12.2
1982	3.0	71.0	17.7	12.6	2.4	72.8	18.5	12.6	7.4	48.1	12.4	12.3
1985	2.7	73.9	19.4	12.6	2.2	75.5	20.0	12.7	6.0	63.2	15.4	12.4
1986	2.7	74.7	19.4	12.6	2.2	76.2	20.1	12.7	5.5	65.3	15.2	12.4
1987	2.4	75.6	19.9	12.7	2.0	77.0	20.5	12.7	5.1	66.7	15.7	12.4
1988	2.4	76.2	20.3	12.7	2.0	77.7	20.9	12.7	5.1	66.7	16.4	12.5
1989	2.5	76.8	21.1	12.7	2.0	78.3	21.7	12.7	5.6	67.0	16.8	12.5
	25 to 29				25 to 29				25 to 29			
1940	5.9	38.1	5.9	10.3	3.4	41.2	6.4	10.7	27.0	12.3	1.6	7.1
1950	4.6	52.6	7.7	12.1	3.3	56.3	8.2	12.2	16.1	23.6	2.8	8.7
1960	2.8	60.7	11.0	12.3	2.2	63.7	11.8	12.3	7.2	38.6	5.4	10.8
1970	1.1	75.4	16.4	12.6	0.9	77.8	17.3	12.6	2.2	58.4	10.0	12.2
1975	1.0	83.1	21.9	12.8	1.0	84.4	22.8	12.8	0.7	73.8	15.4	12.6
1980	0.8	85.4	22.5	12.9	0.8	86.9	23.7	12.9	1.0	77.0	15.2	12.7
1982	0.8	86.0	21.7	12.8	0.8	86.9	22.7	12.9	0.7	82.2	15.8	12.8
1985	0.7	86.1	22.2	12.9	0.8	86.8	23.2	12.9	0.5	82.4	16.7	12.8
1986	0.9	86.1	22.4	12.9	0.9	86.5	23.5	12.9	0.9	84.3	16.3	12.8
1987	0.9	86.0	22.0	12.8	0.8	86.3	23.0	12.9	1.1	84.1	16.9	12.8
1988	1.0	85.9	22.7	12.8	1.0	86.6	23.5	12.9	1.2	82.0	18.1	12.6

(1) Estimates (2) Persons of Hispanic origin are included as appropriate in the "White" or in the "Black and Other Races" category.

Data Sources: U.S. Department of Commerce, Bureau of the Census and U.S. Department of Labor, Bureau of Labor Statistics.

SOURCE: *Digest of Education Statistics 1990,* U.S. Department of Education

TABLE 4-4

COLLEGE ENROLLMENT AND LABOR FORCE STATUS OF 1987 AND 1988 HIGH SCHOOL GRADUATES AGE 16-24 BY SEX AND RACE/ETHNICITY, OCTOBER 1987 AND OCTOBER 1988

[Numbers in thousands]

Item	Civilian noninstitutional population			Civilian labor force [1]				
	Number	Percent	Percent of high school graduates	Number	Labor force participation rate	Employed	Unemployed	
							Number	Unemployment rate
1	2	3	4	5	6	7	8	9
1987 high school graduates [2]								
Total	2,647	100.0	100.0	1,657	62.6	1,400	257	15.5
Men	1,278	48.3	48.3	813	63.6	717	95	11.7
Women	1,369	51.7	51.7	844	61.7	682	162	19.2
White [3]	2,207	83.4	83.4	1,405	63.7	1,226	179	12.8
Black [3]	337	12.7	12.7	198	58.6	132	66	33.4
Hispanic origin [4]	176	6.6	6.6	102	58.0	84	18	17.7
Enrolled in college, October 1987	1,503	100.0	56.8	698	46.5	612	86	12.3
Men	746	49.6	28.2	339	45.4	308	31	9.0
Women	757	50.4	28.6	360	47.5	304	55	15.4
Full-time students	1,357	90.3	51.3	578	42.6	507	71	12.3
Part-time students	146	9.7	5.5	120	82.4	105	15	12.4
White [3]	1,249	83.1	47.2	584	46.8	528	57	9.7
Black [3]	175	11.6	6.6	79	45.0	56	23	29.4
Hispanic origin [4]	59	3.9	2.2	21	(5)	21	—	(*)
Not enrolled in college, October 1987	1,144	100.0	43.2	959	83.8	788	171	17.8
Men	532	46.5	20.1	474	89.0	409	65	13.7
Women	612	53.5	23.1	485	79.2	378	106	21.9
White [3]	959	83.8	36.2	821	85.6	698	123	15.0
Black [3]	162	14.2	6.1	119	73.4	76	43	36.1
Hispanic origin [4]	117	10.2	4.4	81	69.5	63	18	22.2
1988 high school graduates [6]								
Total	2,673	100.0	100.0	1,677	62.7	1,450	227	13.5
Men	1,334	49.9	49.9	869	65.1	752	117	13.4
Women	1,339	50.1	50.1	808	60.3	698	110	13.7
White [3]	2,187	81.8	81.8	1,421	65.0	1,254	167	11.8
Black [3]	382	14.3	14.3	205	53.5	154	50	24.6
Hispanic origin [4]	179	6.7	6.7	103	57.8	77	27	25.9
Enrolled in college, October 1988	1,575	100.0	58.9	747	47.4	660	87	11.6
Men	761	48.3	28.5	362	47.6	328	35	9.5
Women	814	51.7	30.5	384	47.3	332	52	13.6
Full-time students	1,444	91.7	54.0	630	43.6	550	80	12.7
Part-time students	131	8.3	4.9	117	89.2	110	7	5.8
White [3]	1,328	84.3	49.7	666	50.3	596	70	10.5
Black [3]	172	10.9	6.4	49	28.5	37	12	(*)
Hispanic origin [4]	102	6.5	3.8	40	39.5	33	8	(*)
Not enrolled in college, October 1988	1,098	100.0	41.1	930	84.7	790	140	15.1
Men	572	52.1	21.4	506	88.5	424	82	16.2
Women	526	47.9	19.7	424	80.6	365	58	13.7
White [3]	859	78.2	32.1	754	87.7	656	97	12.9
Black [3]	211	19.2	7.9	156	73.9	117	36	24.5
Hispanic origin [4]	77	7.0	2.9	63	82.2	44	19	(*)

SOURCE: *Digest of Education Statistics, 1990* National Center for Education Statistics

TABLE 4-5
OCCUPATION OF EMPLOYED PERSONS 16 AND OVER BY YEARS OF SCHOOL COMPLETED AND SEX, MARCH 1989

Sex and occupation	Total employed, in thousands	Percentage distribution, by years of school completed								Median school years completed
		Total	Elementary school		High school		College			
			Less than 8 years [1]	8 years	1 to 3 years	4 years	1 to 3 years	4 years	5 years or more	
1	2	3	4	5	6	7	8	9	10	11
All persons										
All occupational groups	115,474	100.0	3.0	2.2	10.9	39.4	20.7	14.0	9.8	12.8
Managerial and professional specialty	30,414	100.0	0.4	0.4	2.2	17.4	19.8	29.9	29.9	16.3
Executive, administrative, and managerial	14,795	100.0	0.6	0.7	3.2	26.8	24.0	28.1	16.5	15.0
Professional specialty occupations	15,619	100.0	0.1	0.1	1.2	8.5	15.8	31.6	42.6	16.8
Teachers, except college and university	4,109	100.0	0.1	0.1	1.3	6.6	8.4	38.0	45.6	16.9
Teachers, college and university	717	100.0	[2]	[2]	[2]	4.0	7.1	12.0	76.7	18+
Technical, sales, and administrative support	35,371	100.0	0.5	0.7	7.5	44.7	27.8	14.1	4.6	12.9
Technicians and related support	3,594	100.0	0.1	0.3	2.5	27.9	36.4	22.5	10.2	14.5
Sales occupations	13,640	100.0	0.8	1.0	11.6	39.6	23.7	17.5	5.8	12.9
Administrative support, including clerical	18,137	100.0	0.4	0.6	5.5	51.8	29.2	9.9	2.6	12.8
Service occupations	15,312	100.0	6.0	3.9	21.0	44.4	18.3	5.0	1.4	12.4
Precision production, craft, and repair	13,442	100.0	3.9	3.5	14.0	53.9	18.8	4.4	1.4	12.5
Operators, fabricators, and laborers	17,927	100.0	7.2	4.7	20.5	51.0	12.7	3.0	0.8	12.3
Farming, forestry, and fishing	3,006	100.0	14.2	6.7	17.1	40.8	14.0	5.1	2.1	12.3
Men										
All occupational groups	63,066	100.0	3.7	2.7	11.5	37.1	19.7	14.1	11.1	12.9
Managerial and professional specialty	16,648	100.0	0.5	0.6	2.4	15.4	18.4	29.2	33.5	16.4
Technical, sales, and administrative support	12,272	100.0	0.8	1.0	6.6	34.1	26.9	20.9	7.7	13.9
Service occupations	6,124	100.0	6.5	4.3	20.0	39.5	21.0	6.7	2.0	12.5
Precision production, craft, and repair	12,263	100.0	3.6	3.5	14.1	53.7	19.3	4.3	1.4	12.5
Operators, fabricators, and laborers	13,240	100.0	7.0	4.5	20.1	50.3	13.9	3.2	0.9	12.4
Farming, forestry, and fishing	2,519	100.0	15.6	7.4	16.8	39.5	13.8	4.6	2.2	12.3
Women										
All occupational groups	52,406	100.0	2.2	1.5	10.3	42.2	21.9	13.8	8.2	12.9
Managerial and professional specialty	13,766	100.0	0.2	0.2	2.0	19.9	21.5	30.8	25.4	16.2
Technical, sales, and administrative support	23,098	100.0	0.4	0.6	8.0	50.3	27.3	10.5	2.9	12.8
Service occupations	9,188	100.0	5.7	3.7	21.7	47.6	16.6	3.8	0.9	12.4
Precision production, craft, and repair	1,179	100.0	7.3	3.0	13.2	56.0	13.5	5.6	1.4	12.5
Operators, fabricators, and laborers	4,687	100.0	8.1	5.3	21.7	52.9	9.3	2.3	0.5	12.3
Farming, forestry, and fishing	489	100.0	7.4	3.3	18.2	47.6	14.9	6.5	2.0	12.4

[1] Includes persons reporting no school years completed.
[2] Less than .05 percent.

NOTE.—Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Office of Employment and Unemployment Statistics, "Educational Attainment of Workers, March 1989," unpublished. (This table was prepared May 1990.)

CHART 4-2

SOURCE: Employment and Earnings, January 1984 – January 1992, Bureau of Labor Statistics

TABLE 4-6

EMPLOYED PERSONS IN SELECTED OCCUPATIONS BY SEX AND RACE, 1983 – 1991

Occupation	Total Employed (in thousands)					Percent Black				
	1983	1986	1988	1990	1991	1983	1986	1988	1990	1991
Total, 16 years and over	**100,834**	**109,597**	**114968**	**117,342**	**116,877**	**9.3**	**9.9**	**10.1**	**10.2**	**10.1**
Managerial and Prof Specialty	**23,592**	**26,554**	**29190**	**30,398**	**31,012**	**5.6**	**6.0**	**6.1**	**6.1**	**6.3**
Professional specialty	**12,820**	**13,911**	**14974**	**15,550**	**16,058**	**6.4**	**6.7**	**6.5**	**6.6**	**6.7**
Architects	103	132	143	157	127	1.6	3.2	4.4	2.1	2.1
Engineers	1,572	1,749	1805	1,508	1,846	2.7	3.7	3.8	3.6	3.6
Aerospace (Aeronaut & Astro)	80	93	115	112	103	1.5	4.0	5.4	3.3	1.9
Chemical	67	59	65	67	81	3.0	0.7	2.7	4.6	3.2
Civil	211	233	218	249	223	1.9	4.3	3.7	4.2	4.0
Electrical & electronic	450	550	573	571	562	3.4	4.2	3.7	3.2	4.9
Industrial	210	203	221	199	201	3.3	4.1	5.6	4.9	4.3
Mechanical	259	287	297	310	311	3.2	3.6	2.9	3.2	3.4
Math & computer scientists	463	631	732	805	923	5.4	7.2	7.4	5.7	6.3
Computer sys analysts & sci	276	385	479	566	675	6.2	6.6	7.4	5.7	5.8
Operations & sys. resrch & anal	142	195	210	239	201	4.9	7.6	6.4	5.8	8.2
Natural scientists	357	384	395	413	438	2.6	2.5	2.5	3.9	3.3
Chemists, except biochemists	98	123	125	122	127	4.3	3.6	4.1	5.9	5.2
Geologists and geodesists	65	49	50	52	57	1.1	1.2	0.8	2.9	0.7
Biological and life scientists	55	65	75	77	98	2.4	1.4	1.0	2.9	5.2
Health diagnosing occupations	735	728	818	854	849	2.7	3.3	2.8	3.2	2.6
Physicians	519	489	541	548	575	3.2	3.3	3.3	3.3	3.2
Dentists	126	132	152	170	150	2.4	5.5	1.9	4.3	1.5
Health occupations	1,900	2,026	2154	2,242	2,376	7.1	7.0	7.8	7.3	7.2
Teachers, college and university	606	639	700	709	773	7.7	4.0	4.0	4.3	4.8
Social scis & urban planners	261	312	343	374	386	7.1	5.5	7.1	6.4	6.7
Economists	98	111	116	122	116	6.3	3.0	6.1	4.4	5.1
Psychologists	135	165	196	210	230	8.6	6.8	7.8	7.7	7.8

Occupation	Percent Women					Percent Hispanic				
	1983	1986	1988	1990	1991	1983	1986	1988	1990	1991
Total, 16 years and over	**43.7**	**44.4**	**45.0**	**45.2**	**45.6**	**5.5**	**6.6**	**7.2**	**7.3**	**7.5**
Managerial and Prof Specialty	**40.9**	**43.4**	**44.7**	**45.2**	**46.3**	**2.6**	**3.5**	**3.7**	**3.7**	**3.7**
Professional specialty	**48.1**	**49.4**	**49.8**	**50.4**	**51.6**	**2.5**	**3.3**	**3.4**	**3.4**	**3.4**
Architects	12.7	9.7	14.6	20.6	17.1	1.5	4.1	6.3	5.8	4.4
Engineers	5.8	6.0	7.3	7.6	8.2	2.2	2.5	2.8	2.3	2.4
Aerospace (Aeronaut & Astro)	6.9	7.1	6.3	3.7	8.7	2.1	3.3	0.8	1.2	3.1
Chemical	6.1	8.1	12.0	15.3	9.3	1.4	2.5	2.1	6.6	2.3
Civil	4.0	2.7	6.0	5.4	5.6	3.2	4.0	5.9	3.6	2.5
Electrical & electronic	6.1	6.9	7.9	8.5	8.6	3.1	2.1	2.5	2.2	2.8
Industrial	11.0	10.9	12.9	11.5	13.6	2.4	2.8	1.2	1.1	2.5
Mechanical	2.9	3.5	3.7	4.9	4.9	1.1	1.0	2.6	1.6	1.5
Math & computer scientists	29.6	36.2	33.4	35.7	36.8	2.6	2.5	3.0	3.5	2.9
Computer sys analysts & sci	27.8	34.4	29.5	32.4	33.7	2.7	2.4	2.6	3.0	2.6
Operations & sys. resrch & anal	31.3	39.4	39.6	41.1	43.0	2.2	3.2	4.0	4.9	3.9
Natural scientists	20.5	22.5	24.1	26.9	26.1	2.1	3.2	2.8	2.7	3.6
Chemists, except biochemists	23.3	22.8	23.7	27.8	29.9	1.2	3.0	2.0	5.2	4.6
Geologists and geodesists	18.0	14.0	12.6	15.4	10.5	2.6	1.6	1.0	0.5	0.6
Biological and life scientists	40.8	37.6	39.7	34.6	37.9	1.8	6.2	2.4	2.1	5.2
Health diagnosing occupations	13.3	15.0	18.2	16.5	18.1	3.3	3.2	4.0	4.4	3.6
Physicians	15.8	17.6	20.0	17.9	20.1	4.5	4.1	4.7	5.4	4.4
Dentists	6.7	4.4	9.3	8.6	10.1	1.0	2.0	3.0	2.9	2.7
Health occupations	85.8	85.3	84.9	84.8	86.2	2.2	2.8	2.9	3.1	2.9
Teachers, college and university	36.3	36.0	38.5	38.7	40.8	1.8	3.2	3.6	2.4	2.9
Social scis & urban planners	46.8	46.0	47.6	48.6	53.5	2.1	2.8	3.9	2.7	3.5
Economists	37.9	39.3	35.3	41.3	45.7	2.7	2.8	4.0	3.5	3.2
Psychologists	57.1	52.5	55.8	54.0	60.3	1.1	3.1	4.0	2.5	3.8

SOURCE: Employment and Earnings, January 1991, Bureau of Labor Statistics

TABLE 4-7

EMPLOYED PERSONS BY DETAILED OCCUPATION, SEX AND RACE, 1991 (Numbers in thousands)

Occupation	Total Employed	Percent of Total		
		Women	Black	Hispanic Origin
Total, 16 years and over	**116,877**	**45.6**	**10.1**	**7.5**
Managerial and Professional Specialty	**31,012**	**46.3**	**6.3**	**3.7**
Executive, administrative and managerial	14,954	40.6	5.7	4.0
Officials, adminis., publ. admin.	511	45.9	11.3	3.6
Administrators, Protective Services	52	18.9	12.3	1.9
Financial managers	481	44.7	4.0	3.2
Personnel and labor relations mgrs.	126	57.6	5.7	3.1
Purchasing managers	112	33.9	2.9	2.2
Mgrs., market., advertis., & publ. rel.	514	30.6	2.1	1.9
Administrators, education & rel. fields	541	55.2	8.5	4.2
Managers, medicine and health	199	65.0	6.2	4.1
Managers, properties and real estate	448	46.0	6.3	5.8
Management–related occupations	3,951	50.8	7.4	4.4
Accountants and auditors	1,446	51.5	7.6	3.7
Underwriters & other financial officers	93	64.0	7.2	3.2
Other financial officers	673	48.2	5.9	5.5
Management analysts	218	31.4	5.6	1.8
Personnel, training & labor rel. spec.	426	60.5	11.7	5.6
Buyers, wholesale & ret., exc. farm prod.	204	55.7	3.5	5.3
Constructon inspectors	67	4.9	8.3	7.2
Inspect. & compliance off., exc. constr.	221	23.0	10.1	5.5
Professional specialty	**16,058**	**51.6**	**6.7**	**3.4**
Architects	127	17.1	2.1	4.4
Engineers	1,846	8.2	3.6	2.4
Aerospace	103	8.7	1.9	3.1
Chemical	81	9.3	3.2	2.3
Civil	223	5.6	4.0	2.5
Electrical & electronic	562	8.6	4.9	2.8
Industrial	201	13.6	4.3	2.5
Mechanical	311	4.9	3.4	1.5
Mathematical & computer scientists	923	36.8	6.3	2.9
Computer systems analysts & scientists	675	33.7	5.8	2.6
Operations & sys. researchers & analysts	201	43.0	8.2	3.9
Natural scientists	438	26.1	3.3	3.6
Chemists, except biochemists	127	29.9	5.2	4.6
Geologists and geodesists	57	10.5	0.7	0.6
Biological and life scientists	96	37.9	5.2	5.2

Occupation	Total Employed	Percent of Total		
		Women	Black	Hispanic Origin
Professional specialty continued				
Health diagnosing occupations	849	18.1	2.6	3.6
Physicians	575	20.1	3.2	4.4
Dentists	150	10.1	1.5	2.7
Health assessment & treating occupations	2,376	86.2	7.2	2.9
Registered nurses	1,712	94.8	7.1	2.4
Pharmacists	187	36.8	3.4	3.2
Dietitians	71	93.7	19.1	6.8
Therapists	340	77.9	7.2	4.8
Inhalation	68	63.0	10.3	7.6
Physical	101	77.5	5.8	5.4
Speech	72	88.2	1.3	3.4
Physicians' assistants	67	37.1	8.0	3.7
Teachers, college and university	773	40.8	4.8	2.9
Teachers, except college and university	4,029	74.3	8.6	3.7
Prekindergarten & kindergarten	445	98.7	12.4	5.8
Elementary school	1,524	85.9	8.9	3.3
Secondary school	1,222	54.7	7.3	3.4
Special education	282	83.7	9.5	3.4
Teachers, other	556	61.0	7.1	4.1
Counselors, educational & vocational	222	64.4	15.5	3.7
Librarians, archivists & curators	212	81.1	5.8	2.6
Librarians	194	83.0	6.1	2.4
Social scientists & urban planners	386	53.5	6.7	3.5
Economists	116	45.7	5.1	3.2
Psychologists	230	60.3	7.8	3.8
Social, recreation & religious workers	1,124	51.0	15.1	5.9
Social workers	603	68.0	21.9	7.2
Recreational workers	106	76.3	16.3	7.2
Clergy	331	9.3	5.4	4.3
Religious workers, n.e.c.	84	60.2	3.7	1.6
Lawyers and judges	772	18.9	2.8	1.6
Lawyers	744	19.0	2.6	1.6
Writers, artists, entertainers & athletes	1,957	46.7	5.0	4.1
Authors	91	53.2	1.4	1.0
Technical writers	62	50.0	5.3	1.8
Designers	527	53.4	2.9	4.3
Musicians and composers	156	31.1	7.6	6.2
Actors and directors	87	33.2	10.5	4.8

TABLE 4-7 (continued)

EMPLOYED PERSONS BY DETAILED OCCUPATION, SEX AND RACE, 1991 (Numbers in thousands)

Occupation	Total Employed	Percent of Total		
		Women	Black	Hispanic Origin
Professional specialty continued				
Painters, sculptors, craft–artists	208	55.3	2.7	3.2
Photographers	136	23.0	7.7	4.4
Editors and reporters	279	51.1	4.5	2.8
Public relations specialists	173	56.2	8.3	3.1
Announcers	60	21.3	6.2	5.2
Athletes	74	19.4	8.7	6.3
Technical, sales and administrative support	36,086	64.7	9.3	6.0
Technicians and related support	3,794	49.4	8.9	4.6
Health technologists & technicians	1,379	82.9	12.9	5.5
Clinical lab technologists & technicians	317	75.7	13.4	6.8
Dental hygienists	84	99.8	1.1	3.3
Health record technologists & technicians	67	93.9	13.4	5.2
Radiologic technicians	140	74.5	7.9	8.8
Licensed practical nurses	445	95.0	16.5	4.4
Engineering, & rel. technol. & technicians	947	16.4	7.2	4.4
Electical & electronic technicians	350	13.6	9.3	4.6
Drafting occupations	26,664	17.4	5.4	5.2
Surveying and mapping technicians	67	10.1	2.9	3.9
Science technicians	241	29.8	6.6	5.6
Biological technicians	64	38.2	5.9	5.6
Chemical technicians	88	26.0	7.9	6.0
Technicians, except health, engr. & sci.	1,227	39.4	6.2	3.6
Airplane pilots and navigators	101	3.4	1.5	2.9
Computer programmers	546	34.0	5.7	2.6
Legal assistants	219	83.0	6.7	4.9
Sales occupations	13,958	48.8	6.6	5.5
Supervisors and proprietors	3,739	34.3	4.3	4.9
Sales reps., finance & business services	2,344	42.1	5.0	3.7
Insurance sales	588	31.1	5.3	3.1
Real estate sales	712	51.5	3.8	3.4
Securities & financial services sales	312	28.9	3.8	4.1
Advertising & related sales	140	53.1	4.2	4.1
Sales occupations, other business serv.	592	46.2	6.8	4.5
Sales reps., commodities, except retail	1,601	22.4	2.6	3.5
Sales workers, retail & personal services	6,200	66.7	9.7	7.2
Administrative suport, including clerical	18,334	80.0	11.4	6.6
Supervisors	777	56.4	12.3	7.2
Administrative support, including clerical continued				
General office				
Financial records processing	446	67.1	13.2	7.4
Supervisors, distr.,sched. & adj. clerks	107	70.5	8.7	6.3
Computer equipment operators	182	32.3	13.7	8.5
Computer operators	746	66.3	13.9	6.5
Secretaries, stenographers & typists	741	66.3	13.9	6.5
Secretaries	4,427	98.5	9.1	5.0
Typists	3,791	99.0	7.9	4.8
Information clerks	591	95.1	16.8	6.2
Records processing occupat. exc. financial	1,515	89.5	9.0	7.4
Financial records processing	891	80.5	14.9	7.9
Bookkeepers, accounting & auditing clerks	2,389	91.0	6.2	5.6
Communications equipment operators	1,912	91.5	5.0	5.2
Mail and message distributing occupations	225	87.2	19.1	6.8
Postal clerks, except mail carriers	923	37.8	21.1	5.7
Mail carriers, postal service	278	48.3	27.7	6.3
Material recording, sched. & distr. clerks	332	27.8	17.1	3.0
Dispatchers	1,784	42.6	12.7	8.6
Production coordinators	217	51.3	11.0	6.6
Traffic, shipping & receiving clerks	186	51.0	7.8	4.0
Stock & inventory clerks	550	29.6	13.8	10.9
Meter readers *	565	43.6	13.4	8.6
Weighers, measurers and checkers				
Expediters	64	49.7	15.9	11.0
Adjusters & investigators	131	64.7	9.6	7.4
Insurance adjust., examin. & investigators	1,178	76.0	13.1	6.3
Investigators & adjusters, exc. insurance	352	77.1	12.2	5.7
Eligibility clerks, social welfare	568	76.1	12.5	6.2
Bill & account collectors	91	90.0	17.3	6.5
Miscellaneous administrative support	167	66.0	14.5	7.7
General office clerks	3,408	84.1	12.9	7.9
Bank tellers	765	80.9	12.7	8.2
Data entry keyers	481	90.3	10.7	6.5
Statistical clerks	517	86.0	16.0	9.0
Teachers' aides	77	75.1	10.2	6.0
	486	93.1	13.0	12.4
Service occupations	15,986	59.8	17.2	11.2
Private household	787	96.0	21.0	21.0
Child care workers	340	96.7	10.5	14.1
Cleaning and servants	403	95.8	29.3	26.3

TABLE 4-7 (continued)

EMPLOYED PERSONS BY DETAILED OCCUPATION, SEX AND RACE, 1991 (Numbers in thousands)

Occupation	Total Employed	Percent of Total		
		Women	Black	Hispanic Origin
Service occupations continued				
Protective service	2,071	15.2	16.6	6.2
Supervisors, protective service	182	9.0	11.1	5.1
Firefighting & fire prevention	220	2.3	8.6	4.4
Police & dectectives	870	14.0	15.5	5.8
Police & detectives, public service	485	10.3	11.3	6.5
Sheriffs, bailiffs & oth law enforc off.	116	18.3	15.2	7.9
Correctonal institution officers	269	18.7	23.3	3.6
Guards	799	21.6	21.7	7.5
Service occupations, except private household and protective service	13128	64.6	18.1	11.4
Food preparation & service occupations	5,370	59.3	12.4	12.2
Supervisors	321	71.1	12.2	6.8
Bartenders	290	54.0	2	4.7
Waiters & waitresses	1,355	81.6	4.2	7.1
Cooks, except short order	1,779	46.9	18.3	14.4
Food counter, fountain & related occup.	329	71.0	10.9	7.9
Health service occupations	2,178	88.6	26.4	6.9
Dental assistants	177	96.2	5.6	6.4
Health aides, except nursing	494	83.1	19.6	7.3
Nursing aides, orderlies & attendants	1,506	89.2	31.2	6.9
Cleaning & building service occupations	3,068	43.1	22.8	16.0
Supervisors	173	39.0	26.8	9.4
Maids & handymen	718	82.9	27.2	19.7
Janitors & cleaners	2,126	30.9	21.0	15.4
Personal service occupations	2,512	81.6	11.9	7.7
Barbers	104	18.3	16.7	8.2
Hairdressers & cosmetologists	745	90.2	8.6	7.5
Attendants, amusement & recr. facilities	145	38.8	9.5	7.4
Public transportation attendants	85	83.0	11.1	5.9
Welfare service aides	121	94.7	25.0	16.0
Child care workers	972	96.0	11.7	7.1
Precision production, craft & repair	13,162	8.6	7.8	8.6
Mechanics & repairers	4,427	3.7	7.7	7.0
Supervisors	251	8.2	4.9	6.0
Mechanics & repairers, except supervisors	4,176	3.4	7.8	7.0
Vehicle & mob. equip. mechs. & repairers	1,778	1.1	6.7	8.4
Automobile mechanics	864	0.8	7.3	9.5
Bus, truck & stationery engine mechs.	302	0.3	6.7	7.1
Precision production, craft & repair continued				
Aircraft engine mechanics	133	4.0	7.2	9.3
Small engine repairers	70	1.1	1.3	6.5
Automobile body & related repairers	192	0.6	6.5	8.9
Heavy equipment mechanics	164	0.7	6.0	5.2
Industrial machinery repairers	518	2.7	7.8	7.0
Electrical & electronic equip. repairers	711	9.6	9.9	4.9
Electronic rep. commun. & indus. equip.	172	6.4	9.3	4.8
Data processing equipment repairers	152	14.5	11.8	3.6
Telephone line installers & repairers	64	6.5	7.9	7.6
Telephone installers & repairers	196	13.0	10.7	3.3
Heating, air cond. & refrig. mechanics	253	5.0	3.8	6.2
Miscellaneous mechanics & repairers	891	4.3	8.4	6.4
Construction trades	4,808	1.8	7.3	9.1
Supervisors	610	1.1	5.1	5.4
Construction trades except supervisors	4,196	1.9	7.7	9.6
Brickmasons and stonemasons	166	0.2	20.4	11.6
Tile setters, hard and soft	60	1.9	7.0	11.0
Carpet installers	96	1.5	5.0	17.6
Carpenters	1,277	1.3	4.7	8.2
Drywall installers	126	1.9	7.3	11.7
Electricians	677	1.4	4.4	6.6
Painters, construction and maintenance	531	5.5	9.0	14.7
Plumbers, pipefitters and steamfitters	440	1.0	9.5	7.0
Roofers	194	0.4	10.0	15.2
Extractive occupations	145	3.1	5.3	7.2
Precision production occupations	3,782	23.2	8.5	10.0
Supervisors	1,227	17.1	8.4	7.7
Precision metalworking	905	6.0	5.1	8.3
Tool and die makers	143	0.8	3.0	3.7
Machinists	496	4.1	6.1	8.2
Precious stones & metals workers*				
Sheet-metal workers	121	5.1	3.3	9.6
Precision woodworking occupations	94	14.3	6.0	9.1
Cabinet makers & bench carpenters	54	4.5	2.1	9.0
Prec. textile, apparel & furnishing mach.	231	59.5	8.8	18.4
Dressmakers	109	93.3	9.7	13.3
Tailors *				
Upholsters	59	24.4	6.9	18.1
Precision workers, assorted materials	512	56.0	8.7	11.6
Optical goods workers	63	55.4	4.5	7.7

TABLE 4-7 (continued)

EMPLOYED PERSONS BY DETAILED OCCUPATION, SEX AND RACE, 1991 (N1mbers in thousands)

Occupation	Total Employed	Percent of Total		
		Women	Black	Hispanic Origin
Precision production, craft & repair continued				
Dental lab. & medical appl. technicians	53	31.4	8.5	9.3
Electrical & electronic equip. assemblers	300	70.5	9.8	13.0
Precision food production occupations	436	31.6	15.0	18.5
Butchers and meat cutters	274	20.6	17.5	21.3
Bakers	121	44.5	9.6	15.8
Pres. inspectors, testers & rel. workers	124	21.1	10.4	5.2
Inspectors, testers and graders	115	19.9	10.9	5.3
Plant and system operators	253	4.7	10.1	4.1
Water & sewage treatment plant operators	59	4.8	8.7	3.2
Stationary engineers	105	1.7	10.5	2.5
Operators, fabricators and laborers	17,172	25.2	15.0	12.0
Machine operators, assemblers & inspectors	7,696	50.1	14.8	13.4
Machine oper. & tenders except precision	5,059	41	16.0	14.4
Metalwork. & plastic working machine op.	430	18.1	9.8	8.5
Metal & plastic processing machine op.	156	21.9	11.2	16.4
Woodworking machine operators	139	11.9	17.2	7.7
Printing machine operators	461	26.4	7.2	9.7
Textile, apparel & furnishings mach. op.	1,234	76.9	23.7	18.6
Machine operators, assorted materials	2,613	33.1	15.2	14.6
Fabricators, assemblers & hand working occ.	1,868	32.8	11.9	11.7
Production insp., test, samplers & examin.	768	52	13.9	10.9
Transportation & material moving occupation	48,778	9	15.6	8.5
Motor vehical operators	3,680	10.6	16.3	8.5
Supervisors	80	19.1	11.6	7.4
Truck drivers, heavy	1,975	2.5	14.9	7.9
Truck drivers, light	691	8.8	13.4	9.5
Drivers–sales workers	215	9.1	8.4	5.1
Bus drivers	468	46.7	24.2	6.9
Taxi–cab drivers & chauffeurs	220	13.1	20.1	18.1
Transportaton occ., except motor vehicles	176	2.3	11.0	6.9
Rail transportation occupations	115	2.5	13.5	7.5
Material moving equipment operators	1022	4.2	14.1	8.7
Operating engineers	211	0.7	7.0	7.6
Crane and tower operators	81	1.9	19.3	5.5
Excavating and loading machine operators	96	0.9	4.9	5.7
Grader, dozer & scraper operators	86	0.8	6.2	6.2
Industriel truck & tractor equipment op.	436	7.0	20.5	11.0
Handlers, equipment cleaners, helpers and laborers	4,597	17.5	14.5	13.5
Helpers, construction & extractive occup.	122	2.6	13.8	20.6
Helpers, construction trades	113	2.6	14.8	21.9
Construction laborers	700	3.2	11.7	17.2
Production helpers	86	18.3	13.4	20.7
Freight, stock & material handlers	1,568	18.0	14.9	10.1
Garbage collectors *				
Stock handlers and baggers	903	23.1	10.6	10.8
Machine feeders and offbearers	83	36.4	25.2	7.4
Garage & service station rel. occupations	207	5.6	11.4	10.0
Vehicle washers and equipment cleaners	221	12.7	25.4	16.3
Hand packers and packagers	289	63.5	12.9	16.9
Laborers, except construction	1,257	19.1	14.6	13.6
Farming, forestry and fishing	3,459	16.1	6.4	14.6
Farm operators and managers	1,250	16.5	1.1	1.5
Farmers	1,118	16.3	1.2	1.1
Farm managers	133	17.9	0.8	4.5
Other agricultural and related occupations	2,036	16.8	9.5	23.0
Farm occupations, except managerial	964	22.1	8.3	26.6
Farm workers	883	21.4	8.6	26.8
Related agricultural occupations	1,074	12.1	10.7	19.8
Supervisors	65	6.7	1.9	12.3
Groundskeepers & gardeners, except farm	890	5.5	12.2	21.8
Animal caretakers, except farm	104	65.4	3.9	5.2
Forestry and logging occupations	112	5.6	11.7	10.4
Timber cutting and logging	80	1.9	13.1	5.4
Fishers, hunters and trappers	59	3.6	2.8	7.3

Notes: Sum of occupation subsets rarely total because occupations with fewer than 50,000 employees usually are not listed. * Not listed in 1991

TABLE 4-8

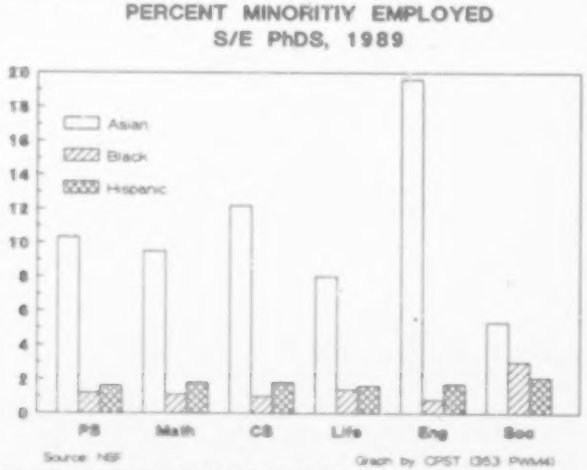
DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD, SEX AND RACE/ETHNICITY, 1989

		All Races		White		Black		Am. Indian		Asian		Hispanic*	
	Sex	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
TOTAL	Total	448,643	100	397,166	88.5	7,153	1.6	798	0.2	41,106	9.2	8,044	1.8
ALL FIELDS	Women	77,160	17.2	69,022	17.4	2,225	31.1	184	24.0	5,309	12.9	1,661	20.5
PHYSICAL	Total	70,279	100	61,594	87.7	931	1.2	134	0.2	7,195	10.2	1,149	1.6
SCIENTISTS	Women	6,070	8.6	4,934	8.0	97	11.7	17	12.7	884	13.7	188	16.4
Chemists	Total	45,649	100	38,514	86.6	657	1.4	63	0.1	5,118	11.2	711	1.6
	Women	4,807	10.7	4,001	10.1	88	13.1	7	11.1	778	15.2	159	22.4
Physicists/	Total	24,560	100	22,060	89.9	174	0.7	71	0.3	2,077	8.5	438	1.8
Astronomers	Women	1,163	4.7	933	4.2	11	6.3	10	14.1	206	9.9	30	6.8
MATHEMATICAL	Total	17,811	100	15,624	88.7	188	1.1	5	0.0	1,644	9.3	322	1.8
SCIENTISTS	Women	1,845	10.5	1,548	9.9	36	19.2	2	40.0	253	15.4	30	9.3
Mathematicians	Total	14,867	100	13,434	90.4	163	1.1	2	0.0	1,139	7.7	271	1.8
	Women	1,525	10.3	1,307	9.7	34	20.9	2	100.0	180	15.8	21	7.7
Statisticians	Total	2,744	100	2,190	79.8	35	1.3	3	0.1	505	18.4	51	1.9
	Women	320	11.7	241	11.0	4	11.4			73	14.5	9	17.6
COMPUTER/INFO	Total	19,797	100	17,018	86.0	190	1.0	33	0.2	2,423	12.2	351	1.8
SPECIALISTS	Women	2,304	11.6	2,037	12.0	18	9.5			246	10.2	24	6.8
ENVIRONMENTAL	Total	19,787	100	18,185	91.8	226	1.2	23	0.1	1,336	6.8	317	1.6
SCIENTISTS	Women	1,664	8.4	1,585	8.8	5	2.2	2	8.7	86	6.4	38	8.2
Earth	Total	15,138	100	13,826	91.3	219	1.4	21	0.1	1,042	6.9	190	1.3
Scientists	Women	1,275	8.4	1,212	8.8	5	2.3	2	9.5	50	4.8	17	8.9
Oceanographers	Total	2,460	100	2,318	94.2	5	0.2			136	5.5	60	2.4
	Women	269	10.9	251	10.8					18	13.3	4	6.7
Atmospheric	Total	2,189	100	2,021	92.3	3	0.2	2	0.1	161	7.4	67	3.1
Scientists	Women	120	5.5	102	5.0					18	11.2	5	7.5
LIFE	Total	115,833	100	104,295	90.0	1,633	1.4	162	0.1	9,275	8.0	1,900	1.6
SCIENTISTS	Women	26,275	22.7	23,247	22.3	649	39.7	59	36.4	2,217	23.9	431	22.7
Biological	Total	67,250	100	60,469	89.9	840	1.2	52	0.1	5,857	8.4	1,133	1.7
Scientists	Women	13,710	23.4	13,836	22.9	305	36.3	22	42.3	1,475	26.1	274	24.4
Agricultural	Total	18,504	100	15,316	82.8	194	1.0	29	0.2	975	5.9	277	1.7
Scientists	Women	1,221	7.4	1,083	7.1	26	17.7	5	17.2	101	10.4	33	11.9
Medical	Total	32,079	100	28,510	88.9	625	2.0	81	0.3	2,844	8.2	500	1.8
Scientists	Women	9,344	29.1	8,328	29.2	316	49.9	32	39.5	641	24.2	124	24.8
PSYCHOLO--	Total	60,398	100	57,833	95.4	1,350	2.2	151	0.2	934	1.5	1,256	2.1
GISTS	Women	21,842	36.0	20,480	35.4	786	58.7	60	39.7	452	48.4	517	41.2
SOCIAL	Total	70,027	100	63,511	90.7	2,109	3.0	169	0.2	3,712	5.3	1,485	2.1
SCIENTISTS	Women	14,845	21.2	13,441	21.2	618	29.3	31	18.3	585	15.8	389	34.8
Economists	Total	18,568	100	16,797	90.4	349	1.9	70	0.4	1,358	7.3	429	2.3
	Women	2,294	12.3	2,050	12.2	67	19.7			174	12.8	84	19.8
Sociologists/	Total	13,529	100	12,527	92.6	357	2.8	40	0.3	447	3.3	382	2.7
Anthropol.	Women	4,139	30.5	3,816	30.5	131	36.7	16	40.0	123	27.5	110	30.4
Other Social	Total	37,910	100	34,187	90.2	1,412	3.7	59	0.2	1,907	5.0	680	1.8
Scientists	Women	8,425	22.2	7,575	22.2	420	29.7	15	25.4	288	15.1	175	25.2
ENGINEERS	Total	74,783	100	59,129	79.1	614	0.8	91	0.1	14,594	19.5	1,294	1.7
	Women	2,315	3.1	1,770	3.0	34	5.5	13	14.3	484	3.3	65	5.1

Blanks indicate no cases reported. * Included here and in other racial groups.

Note: Top percentage in each field is percent of total. Next percentage is percent women in that field.

CHART 4-3



SOURCE: Characteristics of Doctoral Scientists and Engineers in the United States: 1989, National Science Foundation

TABLE 4-9

EMPLOYED DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD, RACE AND YEARS OF PROFESSIONAL EXPERIENCE, 1989

FIELD/RACE	TOTAL	YEARS OF PROFESSIONAL EXPERIENCE																			
		1 or Less		2–4 Years		5–9 Years		10–14 Years		15–19 Years		20–24 Years		25–29 Years		30–34 Years		35–39 Years		40 or More	
	No.	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
ALL FIELDS	448643	14778	3.3	57109	12.7	83948	18.7	80950	18.0	79494	17.7	59327	13.2	31442	7.0	19504	4.3	10535	2.3	2536	0.6
White	397623	12316	3.1	48259	12.1	72700	18.3	70706	17.8	71384	18.0	54257	13.6	29000	7.3	18504	4.7	10217	2.6	2488	0.6
Black	7190	312	4.3	1,313	18.3	1,878	26.1	1,694	23.6	1,083	15.1	415	5.8	152	2.1	184	2.6	15	0.2	24	0.3
Asian	41239	1985	4.8	6,998	17.0	8,809	21.4	8,121	19.7	6,672	16.2	4,463	10.8	2117	5.1	786	1.9	253	0.6	24	0.1
SCIENTISTS	373880	12398	3.3	48,809	13.0	71,868	19.2	68,735	18.4	64,541	17.3	46,970	12.6	25846	6.9	16613	4.4	8445	2.3	2118	0.6
White	338409	10677	3.2	42,355	12.5	64,101	18.9	61,788	18.3	58,979	17.4	43,320	12.8	24112	7.1	15775	4.7	8210	2.4	2086	0.6
Black	6572	274	4.2	1,208	18.4	1,710	26.0	1,563	23.8	924	14.1	415	6.3	152	2.3	188	2.8	15	0.2	24	0.4
Asian	28618	1305	4.9	4,650	17.5	5,382	20.2	5,060	19.0	4,312	16.2	3,043	11.4	1449	5.4	655	2.5	170	0.6	8	0.0
Physical	70209	1896	2.7	8,326	11.9	10,308	14.7	10,647	15.2	11,859	16.9	10,840	15.4	7218	10.3	4657	6.6	2520	3.6	909	1.3
White	62624	1452	2.3	6,689	10.7	8,587	13.7	9,057	14.5	10,503	16.8	9,847	15.7	6806	10.9	4451	7.1	3416	5.5	901	1.4
Black	831	22	2.6	178	21.4	146	17.6	138	16.6	166	20.0	71	8.5	42	5.1	66	7.9		0.0		0.0
Asian	7217	391	5.4	1,367	18.9	1,456	20.2	1,416	19.6	1,140	15.8	827	11.5	345	4.8	140	1.9	62	0.9	8	0.1
Mathematical	17611	453	2.6	1,715	9.7	2,841	16.1	2,824	16.0	3,383	19.2	3,205	18.2	1702	9.7	605	3.4	407	2.3	136	0.8
White	15663	350	2.2	1,407	9.0	2,419	15.4	2,523	16.1	3,008	19.2	2,986	19.1	1515	9.7	595	3.8	407	2.6	136	0.9
Black	198	2	1.0	46	23.2	31	15.7	42	21.2	33	16.7	42	21.2	2	1.0		0.0		0.0		0.0
Asian	1676	101	6.0	247	14.7	391	23.3	239	14.3	334	19.9	160	9.5	171	10.2	10	0.6		0.0		0.0
Computer/Info	19797	565	2.9	2,358	11.9	3,911	19.8	4,444	22.4	4,007	20.2	2,334	11.8	983	5.0	469	2.4	156	0.8	29	0.1
White	17070	492	2.9	1,717	10.1	3,067	18.0	4,020	23.6	3,673	21.5	2,080	12.2	915	5.4	469	2.7	156	0.9	29	0.2
Black	191	9	4.7	18	9.4	152	79.6	9	4.7	3	1.6		0.0		0.0		0.0		0.0		0.0
Asian	2422	63	2.6	611	25.2	653	27.0	383	15.8	304	12.6	254	10.5	68	2.8		0.0		0.0		0.0
Environmental	19787	516	2.6	2,110	10.7	3,965	20.0	3,518	17.8	3,613	18.3	3,048	15.4	1362	6.9	793	4.0	519	2.6	130	0.7
White	16178	462	2.5	1,898	10.4	3,547	19.5	3,185	17.5	3,416	18.8	2,791	15.4	1309	7.2	725	4.0	503	2.8	130	0.7
Black	226	1	0.4	10	4.4	151	66.2	52	22.8	4	1.8		0.0	9	3.9		0.0		0.0		0.0
Asian	1338	49	3.7	192	14.3	257	19.2	270	20.2	185	13.8	257	19.2	44	3.3	68	5.1	16	1.2		0.0
Life	115833	4674	4.0	16,596	14.3	23,042	19.9	21,127	18.2	18,676	16.1	13,350	11.5	7603	6.6	5361	4.6	2550	2.2	350	0.3
White	104302	3955	3.8	14,805	14.0	20,995	20.1	18,947	18.2	16,812	15.9	12,213	11.7	6941	6.7	5068	4.9	2435	2.3	342	0.3
Black	1645	100	6.1	321	19.5	344	20.9	378	23.0	256	15.6	106	6.4	62	3.8	24	1.5	15	0.9	8	0.5
Asian	9296	535	5.8	1,553	16.7	1,593	17.1	1,739	18.7	1,704	18.3	993	10.7	580	6.2	261	2.8	92	1.0		0.0
Psychologists	60596	2218	3.7	8,950	14.8	14,388	23.7	11,574	19.1	9,436	15.6	5,955	9.8	3137	5.2	2399	4.0	1038	1.7	181	0.3
White	57961	2062	3.6	8,443	14.6	13,605	23.5	10,922	18.8	9,131	15.8	5,810	10.0	3124	5.4	2364	4.1	1038	1.8	166	0.3
Black	1364	67	4.9	275	20.2	444	32.6	332	24.3	127	9.3	60	4.4	5	0.4	14	1.0		0.0	15	1.1
Asian	947	66	7.0	146	15.4	269	28.4	202	21.3	148	15.6	81	8.6	4	0.4	14	1.5		0.0		0.0
Social	70027	2076	3.0	8644	12.3	13213	18.9	14601	20.9	13567	19.4	8238	11.8	3841	5.5	2329	3.3	1255	1.8	383	0.5
White	63611	1884	3.0	7596	11.9	11881	18.7	13114	20.6	12636	19.9	7593	11.9	3502	5.5	2103	3.3	1255	2.0	382	0.6
Black	2115	73	3.5	360	17.0	442	20.9	612	28.9	335	15.8	136	6.4	32	1.5	64	3.0		0.0	1	0.0
Asian	3720	100	2.7	534	14.4	763	20.5	811	21.8	497	13.4	471	12.7	237	6.4	162	4.4		0.0		0.0
ENGINEERS	74783	2380	3.2	8410	11.2	12280	16.4	12215	16.3	14953	20.0	12357	16.5	5596	7.5	2891	3.9	2090	2.8	418	0.6
White	59214	1641	2.8	5904	10.0	8599	14.5	8940	15.1	12405	20.9	10937	18.5	4888	8.3	2729	4.6	2007	3.4	402	0.7
Black	618	38	6.1	105	17.0	168	27.2	131	21.2	159	25.7		0.0		0.0	16	2.6		0.0		0.0
Asian	14621	680	4.7	2348	16.1	3427	23.4	3061	20.9	2360	16.1	1420	9.7	668	4.6	131	0.9	83	0.6	16	0.1

SOURCE: Characteristics of Doctoral Scientists and Engineers in the United States; 1989, National Science Foundaton

TABLE 4-10

EMPLOYED DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD, SEX, RACE AND CITIZENSHIP, 1989

Characteristics (in %)	Total	All Sci.	Physical Sci.	Math Sci.	Computer Inf. Spec.	Environ Sci.	Life Sci	Psycho-logists	Social Sci.	All Engineers
	448,643	373,860	70,209	17,611	19,797	19,787	115,833	60,596	70,027	74,783
Sex										
Women	17.2	20.0	8.6	10.5	11.6	8.4	22.7	36.0	21.2	3.1
Race/Ethnicity										
White	88.6	90.5	87.8	88.9	86.2	91.9	90.0	95.7	90.8	79.2
Asian/Pacific Isl	9.2	7.1	10.3	9.5	12.2	6.8	8.0	1.6	5.3	19.6
Black	1.6	1.8	1.2	1.1	1.0	1.2	1.4	2.3	3.0	0.8
Native American	0.2	0.2	0.2		0.1	0.1	0.2	0.2	0.2	0.1
Hispanic	1.8	1.8	1.6	1.8	1.8	1.6	1.6	2.1	2.1	1.7
Age										
Under 30	1.1	1.0	2.0	1.2	1.5	0.2	0.9	0.7	0.3	1.6
30–34	9.9	9.9	12.8	11.5	8.9	8.2	11.0	8.5	6.7	10.3
35–39	16.7	17.1	13.9	13.3	17.1	15.9	19.1	21.0	14.9	14.9
40–44	19.4	19.8	15.7	16.6	24.7	21.7	20.0	22.3	20.3	17.3
45–49	19.7	19.8	19.2	22.0	24.1	19.1	18.5	17.8	22.8	19.2
50–54	12.7	12.1	14.3	16.2	11.8	12.8	11.5	9.4	11.9	16.1
55–59	9.2	9.1	10.3	9.7	3.1	12.0	8.2	8.4	9.8	9.5
60–64	6.3	6.4	6.8	5.1	3.6	4.8	6.8	6.5	6.6	6.2
65 or over	4.5	4.5	4.8	3.8	1.9	5.0	3.6	4.8	6.3	4.3
Citizenship										
U.S. native–born	83.0	85.7	80.5	77.9	79.5	83.8	86.3	94.5	8.6	69.7
U.S. naturalized	10.7	8.8	11.8	12.5	11.6	9.3	9.0	3.9	8.0	19.9
Non–U.S. perm. resident	5.0	4.4	5.9	7.1	7.7	5.8	3.7	1.4	4.5	8.2
Non–U.S. temp. resident	1.2	1.0	1.8	2.5	1.2	0.9	1.0	0.2	0.8	1.9

Notes: Columns may not add to 100% because non–responses are not included and Hispanics may be of any race.
Blanks indicate too few responese to extimate. All data are estimated from a sample of the total population.

SOURCE: 1989 Survey of Doctoral Recipients, National Science Foundation/SRS

TABLE 4-11

EMPLOYED DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND CITIZENSHIP STATUS, 1989

Field	Total*		Citizenship											
			U.S.						Non-U.S.					
			Total		Native		Naturalized		Total		Perm Res		Temp Res	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
All Fields	448,643	100	420,457	93.7	372,486	83.0	47,905	10.7	28,133	6.3	22,576	5.0	5,299	1.2
Women	77,160	17.2	73,160	94.8	67,048	86.9	6,112	7.9	3,967	5.1	3,206	4.2	761	1.0
SCIENTISTS	373,160	83.2	353,409	94.7	320,372	85.9	33,013	8.8	20,415	5.5	16,452	4.4	3,911	1.0
Physical	70,209	15.6	64,802	92.3	56,507	80.5	8,295	11.8	5,407	7.7	4,162	5.9	1,233	1.8
Chemists	45,649	10.2	42,643	93.4	36,870	80.8	5,773	12.6	3,006	6.6	2,394	5.2	603	1.3
Physicists/Astron	24,560	5.5	22,159	90.2	19,637	80.0	2,522	10.3	2,401	9.8	1,768	7.2	630	2.6
Mathematical	17,611	3.9	15,924	90.4	13,715	77.9	2,209	12.5	1,687	9.6	1,251	7.1	436	2.5
Mathematicians	14,867	3.3	13,539	91.1	11,864	79.8	1,675	11.3	1,328	8.9	989	6.7	339	2.3
Statisticians	2,744	0.6	2,385	86.9	1,851	67.5	534	19.5	359	13.1	262	9.5	97	3.5
Computer/Info	19,797	4.4	18,045	91.2	15,744	79.5	2,301	11.6	1,752	8.8	1,524	7.7	228	1.2
Environmental	19,787	4.4	18,426	93.1	16,581	83.8	1,845	9.3	1,361	6.9	1,151	5.8	179	0.9
Earth	15,138	3.4	14,098	93.1	12,650	83.6	1,448	9.6	1,040	6.9	906	6.0	117	0.8
Oceanographers	2,460	0.5	2,375	96.5	2,246	91.3	129	5.2	85	3.5	53	2.2	32	1.3
Atmospheric	2,189	0.5	1,953	89.2	1,685	77.0	268	12.2	236	10.8	192	8.8	30	1.4
Life	115,833	25.8	110,329	95.2	99,941	86.3	10,373	9.0	5,504	4.8	4,343	3.7	1,161	1.0
Biological	67,250	15.0	63,818	94.9	57,766	85.9	6,044	9.0	3,432	5.1	2,538	3.8	894	1.3
Agricultural	16,504	3.7	15,907	96.4	14,856	90.0	1,051	6.4	597	3.6	457	2.8	140	0.8
Medical	32,079	7.2	30,604	95.4	27,319	85.2	3,278	10.2	1,475	4.6	1,348	4.2	127	0.4
Psychologists	60,596	13.5	59,630	98.4	57,267	94.5	2,361	3.9	938	1.5	835	1.4	94	0.2
Social	70,027	15.6	66,253	94.6	60,617	86.6	5,629	8.0	3,766	5.4	3,186	4.5	580	0.8
Economists	18,588	4.1	16,893	90.9	15,212	81.8	1,681	9.0	1,687	9.1	1,405	7.6	282	1.5
Sociologist/Anthro	13,529	3.0	12,949	95.7	12,206	90.2	740	5.5	580	4.3	534	3.9	46	0.3
Other Social	37,910	8.4	36,411	96.0	33,199	87.6	3,208	8.5	1,499	4.0	1,247	3.3	252	0.7
ENGINEERS	74,783	16.7	67,048	89.7	52,114	69.7	14,892	19.9	7,718	10.3	6,124	8.2	1,388	1.9
Aero/Astro	6367	1.4	5,933	93.2	4,554	71.5	1,379	21.7	434	6.8	361	5.7	73	1.1
Chemical	7959	1.8	7,151	89.8	5,541	69.6	1,610	20.2	808	10.2	620	7.8	119	1.5
Civil	6951	1.5	6,184	89.0	4,642	66.8	1,542	22.2	767	11.0	617	8.9	148	2.1
Elect/Electronic	15088	3.4	13,103	86.8	9,770	64.8	3,333	22.1	1,968	13.0	1,616	10.7	344	2.3
Materials Science	8280	1.8	7,206	87.0	5,660	68.4	1,546	18.7	1,074	13.0	751	9.1	208	2.5
Mechanical	7390	1.6	6,672	90.3	5,118	69.3	1,554	21.0	718	9.7	514	7.0	192	2.6
Nuclear	2437	0.5	2,201	90.3	1,795	73.7	406	16.7	236	9.7	208	8.5	28	1.1
Systems Design	3896	0.9	3,618	92.9	2,880	73.9	738	18.9	278	7.1	254	6.5	24	0.6
Other	16415	3.7	14,980	91.3	12,154	74.0	2,784	17.0	1,435	8.7	1,183	7.2	252	1.5

CHART 4-4

UNEMPLOYMENT RATES BY SEX, OF PhD SCIENTISTS & ENGINEERS, 1973 - 1989

Source NSF

Graph by CPST (150A MG)

SOURCE: Characteristics of Recent Science and Engineering Graduates: 1988, National Science Foundation, NSF 90-305

TABLE 4-12

EMPLOYED 1986 BACHELORS GRADUATES BY FIELD OF DEGREE, PRIMARY WORK ACTIVITY AND SEX IN 1988

Field of Degree and Sex	Total Employed		Research and Development								Other Work Activity (1)									
	Number	%	Total	%	Basic research	%	Applied research	%	Develop-ment	%	Manage-ment	%	Teaching	%	Production/ Inspect.	%	Rpt/Stat Comp work	%	Sales	%
Total, all fields	244,000	100.0	50,500	20.7	5,000	2.0	8,100	3.3	37,400	15.3	41,600	17.0	21,600	8.9	40,300	16.5	38,300	15.7	27,300	11.2
Men	160,000	65.6	36,500	22.8	2,200	1.4	4,400	2.8	30,000	18.8	27,900	17.4	9,500	5.9	30,900	19.3	23,000	14.4	16,300	10.2
Women	84,800	34.8	23,700	27.9	2,800	3.3	3,700	4.4	7,500	8.8	13,700	16.2	12,100	14.3	9,400	11.1	15,400	18.2	11,000	13.0
Total sciences	174,800	100.0	23,600	13.5	4,500	2.6	5,100	2.9	14,000	8.0	31,500	18.0	20,800	11.9	22,800	13.0	32,200	18.4	23,600	13.5
Men	97,900	56.0	12,100	12.4	1,800	1.8	2,000	2.0	8,300	8.5	19,000	19.4	8,700	8.9	15,600	15.9	17,900	18.3	12,900	13.2
Women	76,900	44.0	11,600	15.1	2,700	3.5	3,100	4.0	5,700	7.4	12,500	16.3	12,100	15.7	7,200	9.4	14,300	18.6	10,800	14.0
Physical sciences	8,000	100.0	2,300	28.8	300	3.8	700	8.8	1,300	16.3	700	8.8	900	11.3	2,100	26.3	600	7.5	700	8.8
Men	5,300	66.3	1,600	30.2	100	1.9	300	5.7	1,200	22.6	500	9.4	500	9.4	1,200	22.6	400	7.5	300	5.7
Women	2,800	35.0	700	25.0	200	7.1	400	14.3	200	7.1	200	7.1	400	14.3	900	32.1	200	7.1	400	14.3
Math/Statistics	14,500	100.0	1,900	13.1	100	0.7	400	2.8	1,400	9.7	2,500	17.2	3,500	24.1	1,100	7.6	3,600	24.8	1,200	8.3
Men	7,800	53.8	1,000	12.8			200	2.6	800	10.3	1,700	21.8	1,500	19.2	800	10.3	1,900	24.4	700	9.0
Women	6,600	45.5	900	13.6	100	1.5	200	3.0	700	10.6	700	10.6	2,000	30.3	400	6.1	1,700	25.8	600	9.1
Computer science	37,700	100.0	7,800	20.7	200	0.5	200	0.5	7,500	19.9	3,200	8.5	600	1.6	3,800	10.1	17,600	46.7	1,400	3.7
Men	23,900	63.4	4,900	20.5	100	0.4	100	0.4	4,700	19.7	2,200	9.2	300	1.3	2,700	11.3	10,800	45.2	900	3.8
Women	13,700	36.3	2,900	21.2	100	0.7	100	0.7	2,700	19.7	1,000	7.3	300	2.2	1,100	8.0	6,800	49.6	500	3.6
Environ science	3,600	100.0	600	16.7	100	2.8	400	11.1	100	2.8	700	19.4	300	8.3	600	16.7	600	16.7	300	8.3
Men	2,600	72.2	500	19.2	100	3.8	300	11.5	100	3.8	600	23.1	300	11.5	600	23.1	100	3.8	200	7.7
Women	1,000	27.8	100	10.0			100	10.0			100	10.0					400	40.0	100	10.0
Life sciences	28,200	100.0	6,900	24.5	3,000	10.6	2,600	9.2	1,300	4.6	3,700	13.1	2,800	9.9	7,300	25.9	900	3.2	3,300	11.7
Men	14,200	50.4	2,200	15.5	1,100	7.7	800	5.6	300	2.1	2,100	14.8	1,500	10.6	4,800	33.8	100	0.7	2,100	14.8
Women	14,000	49.6	4,800	34.3	1,900	13.6	1,800	12.9	1,000	7.1	1,600	11.4	1,400	10.0	2,500	17.9	800	5.7	1,300	9.3
Psychology	26,500	100.0	1,500	5.7	400	1.5	700	2.6	400	1.5	6,800	25.7	4,600	17.4	2,900	10.9	2,300	8.7	4,500	17.0
Men	10,700	40.4	600	5.6	200	1.9	200	1.9	200	1.9	3,500	32.7	800	7.5	1,400	13.1	1,100	10.3	1,500	14.0
Women	15,800	59.6	900	5.7	200	1.3	400	2.5	200	1.3	3,300	20.9	3,800	24.1	1,600	10.1	1,300	8.2	2,900	18.4
Social sciences	56,300	100.0	2,600	4.6	500	0.9	200	0.4	1,800	3.2	14,000	24.9	8,000	14.2	4,900	8.7	6,700	11.9	12,200	21.7
Men	33,300	59.1	1,200	3.6	300	0.9			900	2.7	8,400	25.2	3,800	11.4	4,200	12.6	3,500	10.5	7,200	21.6
Women	23,000	40.9	1,400	6.1	200	0.9	200	0.9	900	3.9	5,600	24.3	4,200	18.3	700	3.0	3,200	13.9	5,000	21.7
Total engineering	70,000	100.0	26,800	38.3	400	0.6	3,000	4.3	23,400	33.4	10,100	14.4	800	1.1	17,500	25.0	6,100	8.7	3,700	5.3
Men	62,100	88.7	24,400	39.3	400	0.6	2,400	3.9	21,700	34.9	8,900	14.3	800	1.3	15,300	24.6	5,000	8.1	3,500	5.6
Women	7,900	11.3	2,300	29.1			600	7.6	1,700	21.5	1,200	15.2	100	1.3	2,200	27.8	1,100	13.9	200	2.5

(1) Does not include Professional Services, Other, or No Report

NOTES: Detail may not add to total because of rounding. Blank spaces indicate too few to estimate.

SOURCE: Characteristics of Recent Science and Engineering Graduates: 1988, National Science Foundation, NSF 90-305

TABLE 4-13

EMPLOYED 1987 BACHELORS GRADUATES BY FIELD OF DEGREE, PRIMARY WORK ACTIVITY AND SEX IN 1988

Field of Degree and Sex	Total Employed Number	%	Research and Development								Other Work Activity (1)									
			Total	%	Basic research	%	Applied research	%	Develop-ment	%	Manage-ment	%	Teaching	%	Production/ Inspect.	%	Rpt/Stat Comp work	%	Sales	%
Total, all fields	241,000	100.0	48,600	20.2	3,300	1.4	11,900	4.9	33,300	13.8	42,300	17.6	21,900	9.1	38,200	15.9	38,100	15.8	28,500	11.8
Men	152,700	63.4	34,900	22.9	2,100	1.4	6,700	4.4	26,200	17.2	24,900	16.3	8,800	5.8	29,500	19.3	22,100	14.5	16,600	10.9
Women	88,300	36.6	13,700	15.5	1,300	1.5	5,200	5.9	7,200	8.2	17,500	19.8	13,200	14.9	8,800	10.0	1,600	1.8	11,900	13.5
Total sciences	172,300	100.0	24,200	14.0	2,900	1.7	8,600	5.0	12,700	7.4	33,500	19.4	20,100	11.7	19,500	11.3	32,800	19.0	25,200	14.6
Men	95,000	55.1	14,600	15.4	1,700	1.8	4,300	4.5	8,600	9.1	17,500	18.4	7,300	7.7	12,900	13.6	18,200	19.2	13,900	14.6
Women	77,300	44.9	9,600	12.4	1,200	1.6	4,300	5.6	4,100	5.3	1,600	2.1	12,800	16.6	6,600	8.5	14,600	18.9	11,300	14.6
Physical sciences	8,400	100.0	2,400	28.6	400	4.8	900	10.7	1,100	13.1	500	6.0	1,200	14.3	2,600	31.0	700	8.3	200	2.4
Men	6,000	71.4	1,700	28.3	400	6.7	400	6.7	900	15.0	400	6.7	900	15.0	190	3.2	500	8.3	200	3.3
Women	2,400	28.6	700	29.2	100	4.2	400	16.7	200	8.3	100	4.2	300	12.5	700	29.2	300	12.5	100	4.2
Math/Statistics	11,900	100.0	2,200	18.5	200	1.7	600	5.0	1,400	11.8	900	7.6	3,500	29.4	700	5.9	2,800	23.5	1,000	8.4
Men	6,400	53.8	1,300	20.3	100	1.6	300	4.7	900	14.1	600	9.4	1,800	28.1	400	6.3	1,300	20.3	600	9.4
Women	5,500	46.2	900	16.4	100	1.8	300	5.5	500	9.1	300	5.5	1,700	30.9	300	5.5	1,500	27.3	400	7.3
Computer science	35,500	100.0	7,600	21.4	100	0.3	400	1.1	7,000	19.7	2,800	7.9	900	2.5	3,200	9.0	17,700	49.9	1,800	5.1
Men	24,000	67.6	5,400	22.5	100	0.4	300	1.3	5,000	20.8	2,300	9.6	400	1.7	2,500	10.4	11,200	46.7	1,200	5.0
Women	11,500	32.4	2,200	19.1			200	1.7	2,100	18.3	500	4.3	500	4.3	700	6.1	6,500	56.5	600	5.2
Environ science	3,600	100.0	400	11.1	100	2.8	200	5.6	100	2.8	400	11.1	300	8.3	1,200	33.3	300	8.3	300	8.3
Men	3,000	83.3	400	13.3	100	3.3	200	6.7	100	3.3	200	6.7	200	6.7	1,200	40.0	200	6.7	200	6.7
Women	600	16.7						0.0			200	33.3	100	16.7					100	16.7
Life sciences	28,000	100.0	7,500	26.8	1,700	6.1	4,100	14.6	1,700	6.1	3,800	13.6	3,600	12.9	4,900	17.5	1,400	5.0	3,300	11.8
Men	14,500	51.8	3,500	24.1	600	4.1	2,100	14.5	700	4.8	2,300	15.9	1,300	9.0	2,900	20.0	900	6.2	1,600	11.0
Women	13,500	48.2	4,000	29.6	1,100	8.1	2,000	14.8	1,000	7.4	1,500	11.1	2,400	17.8	2,100	15.6	500	3.7	1,800	13.3
Psychology	28,200	100.0	400	1.4			200	0.7	200	0.7	7,600	27.0	5,400	19.1	2,000	7.1	2,200	7.8	6,400	22.7
Men	9,900	35.1	200	2.0					200	2.0	2,700	27.3	1,400	14.1	700	7.1	700	7.1	2,600	26.3
Women	18,300	64.9	200	1.1			200	1.1			4,900	26.8	4,000	21.9	1,300	7.1	1,500	8.2	3,800	20.8
Social sciences	56,700	100.0	3,600	6.3	300	0.5	2,200	3.9	1,100	1.9	17,500	30.9	5,200	9.2	4,800	8.5	7,800	13.8	12,200	21.5
Men	31,200	55.0	2,100	6.7	300	1.0	1,000	3.2	800	2.6	8,900	28.5	1,400	4.5	3,400	10.9	3,500	11.2	7,700	24.7
Women	25,500	45.0	1,500	5.9			1,200	4.7	300	1.2	8,600	33.7	3,800	14.9	1,400	5.5	4,300	16.9	4,500	17.6
Total engineering	68,700	100.0	24,400	35.5	500	0.7	3,300	4.8	20,600	30.0	8,900	13.0	1,900	2.8	18,700	27.2	5,300	7.7	3,300	4.8
Men	57,700	84.0	20,300	35.2	400	0.7	2,400	4.2	17,500	30.3	7,400	12.8	1,500	2.6	16,600	28.8	3,900	6.8	2,700	4.7
Women	11,000	16.0	4,100	37.3			1,000	9.1	3,100	28.2	1,400	12.7	400	3.6	2,200	20.0	1,300	11.8	600	5.5

(1) Does not include Professional Services, Other, or No Report

NOTES: Detail may not add to total because of rounding. Blank spaces indicate too few to estimate.

SOURCE: Characteristics of Recent Science and Engineering Graduates: 1988, National Science Foundation, NSF 90-305

TABLE 4-14

EMPLOYED 1986 BACHELORS GRADUATES BY TYPE OF EMPLOYER, FIELD OF DEGREE AND SEX IN 1988

Field of Degree and Sex	Total Employed Number	%	Type of Employer: Business and Industry Total	%	Industry	%	Self Employed	%	Educational Institution Total	%	4-yr College University	%	Other	%	Non-profit Ogranizations	%	Federal Government	%	State/local Government	%
Total, all fields	244,800	100.0	167,300	68.3	160,400	6.7	6,900	2.8	22,900	9.4	4,800	2.0	18,100	7.4	9,100	3.7	11,100	4.5	12,800	5.2
Men	160,000	65.4	114,800	71.8	109,300	68.3	5,500	3.4	9,800	6.1	3,000	1.9	6,800	4.3	3,800	2.4	7,900	4.9	8,400	5.3
Women	84,800	34.6	53,600	63.2	51,100	60.3	1,400	1.7	13,100	15.4	1,800	2.1	11,200	13.2	5,300	6.3	3,200	3.8	4,400	5.2
Total sciences	174,800	100.0	112,900	64.6	106,800	61.1	6,000	3.4	21,700	12.4	4,100	2.3	17,600	10.1	8,500	4.9	6,400	3.7	9,900	5.7
Men	97,900	56.0	66,700	68.1	6,200	6.3	4,700	4.8	8,800	9.0	2,300	2.3	6,500	6.6	3,200	3.3	3,700	3.8	6,000	6.1
Women	76,900	44.0	46,200	60.1	44,800	58.3	1,400	1.8	12,900	16.8	1,800	2.3	11,100	14.4	5,200	6.8	2,600	3.4	3,900	5.1
Physical sciences	8,000	100.0	5,200	65.0	5,200	65.0	100	1.3	900	11.3	200	2.5	700	8.8	100	1.3	400	5.0	400	5.0
Men	5,300	66.3	3,400	62.3	3,300	62.3	100	1.9	500	9.4	100	1.9	400	7.5	100	1.9	300	5.7	200	3.8
Women	2,800	35.0	1,800	64.3	1,800	64.3			400	14.3	100		300	10.7			100	3.6	100	3.6
Math/Statistics	14,500	100.0	8,600	59.3	8,400	57.9	200	1.4	3,400	23.4	700	4.8	2,700	18.6	300	2.1	700	4.8	300	2.1
Men	7,800	53.8	5,000	64.1	4,700	60.3	200	2.6	1,400	17.9	300	3.8	1,200	15.4	100	1.3	200	2.6	100	1.3
Women	6,600	45.5	3,700	56.1	3,700	56.1			2,000	30.3	400	6.1	1,600	24.2	100	1.5	400	6.1	200	3.0
Computer science	37,700	100.0	30,800	81.7	30,300	80.4	500	1.3	1,700	4.5	1,200	3.2	500	1.3	600	1.6	1,600	4.2	1,100	2.9
Men	32,900	87.3	19,500	59.3	19,100	58.1	400	1.2	1,100	3.3	800	2.4	300	0.9	400	1.2	900	2.7	800	2.4
Women	13,700	36.3	11,300	82.5	11,200	81.8	100	0.7	600	4.4	400	2.9	300	2.2	200	1.5	800	5.8	200	1.5
Environ science	3,600	100.0	2,400	66.7	2,300	63.9	100	2.8	100	2.8			100	2.8	100	2.8	400	11.1	100	2.8
Men	2,600	72.2	1,900	73.1	1,900	73.1			100	3.8			100	3.8	100	3.8	100	3.8	100	3.8
Women	1,000	27.8	500	50.0	400	40.0	100	10.0									300	30.0	100	10.0
Life sciences	28,200	100.0	16,500	58.5	14,900	52.8	1,700	6.0	5,000	17.7	500	1.8	4,500	16.0	300	1.1	1,000	3.5	2,300	8.2
Men	14,200	50.4	9,900	69.7	8,300	58.5	1,500	10.6	2,200	15.5	300	2.1	1,900	13.4	200	1.4	400	2.8	800	5.6
Women	14,000	49.6	6,600	47.1	6,500	46.4	100	0.7	2,800	20.0	200	1.4	2,600	18.6	100	0.7	600	4.3	1,500	10.7
Psychology	26,500	100.0	14,200	53.6	13,200	49.8	1,000	3.8	3,800	14.3	400	1.5	3,400	12.8	3,300	12.5	400	1.5	1,500	5.7
Men	10,700	40.4	6,400	59.8	5,900	55.1	400	3.7	400	3.7			400	3.7	800	7.5	200		400	3.7
Women	15,800	59.6	7,900	50.0	7,300	46.2	600	3.8	3,400	21.5	400	2.5	3,000	19.0	2,500	15.8	200	1.3	1,100	7.0
Social sciences	56,300	100.0	35,000	62.2	32,600	57.9	2,400	4.3	6,700	11.9	1,100	2.0	5,700	10.1	3,700	6.6	1,900	3.4	4,300	7.6
Men	33,300	59.1	20,700	62.2	18,700	56.2	2,000	6.0	3,100	9.0	800	2.4	2,300	6.9	1,500	4.5	1,600	4.8	3,600	10.8
Women	23,000	40.9	14,400	62.6	13,900	60.4	400	1.7	3,700	16.1	200	0.9	3,400	14.8	2,200	9.6	300	1.3	700	3.0
Total engineering	70,000	100.0	54,500	77.9	53,600	76.6	900	1.3	1,200	1.7	800	1.1	500	0.7	600	0.9	4,700	6.7	2,900	4.1
Men	62,100	88.7	48,100	77.5	47,300	76.2	800	1.3	1,000	1.6	700	1.1	300	0.5	500	0.8	4,200	6.8	2,400	3.9
Women	7,900	11.3	6,400	81.0	6,300	79.7			200	2.5	100	1.3	100	1.3	100	1.3	500	6.3	500	6.3

(1) Does not include ~~Professional Services~~, Other, or No Report

NOTES: Detail may not add to total because of rounding. Blank spaces indicate too few to estimate.

SOURCE: Characteristics of Recent Science and Engineering Graduates: 1988, National Science Foundation, NSF 90-305

TABLE 4-15

EMPLOYED 1987 BACHELORS GRADUATES BY TYPE OF EMPLOYER, FIELD OF DEGREE AND SEX IN 1988

Field of Degree and Sex	Total Employed		Type of Employer															
			Business and Industry						Educational Institution						Non-profit			
	Number	%	Total	%	Industry	%	Self Employed	%	Total	%	4-yr College University	%	Other	%	Ogran-ization	%	Federal Government	%	State/local Government	%
Total, all fields	241,000	100.0	167,000	69.3	160,000	66.4	7,000	2.9	21,100	8.8	8,300	3.4	12,800	5.3	9,900	4.1	12,700	5.3	9,600	4.0
Men	152,700	63.4	112,900	73.9	108,800	71.3	4,100	2.7	8,700	5.7	4,200	2.8	4,500	2.9	3,200	2.1	8,200	5.4	6,300	4.1
Women	88,300	36.6	54,200	61.4	51,300	58.1	2,900	3.3	12,500	14.2	4,100	4.6	8,300	9.4	6,700	7.6	4,400	5.0	3,300	3.7
Total sciences	172,300	100.0	112,700	65.4	107,100	62.2	5,600	3.3	18,900	11.0	6,700	3.9	12,200	7.1	9,700	5.6	7,100	4.1	7,400	4.3
Men	95,000	55.1	66,600	70.1	63,900	67.3	2,700	2.8	7,100	7.5	2,900	3.1	4,200	4.4	2,900	3.1	3,900	4.1	4,700	4.9
Women	77,300	44.9	46,100	59.6	43,200	55.9	2,900	3.8	11,800	15.3	3,800	4.9	8,100	10.5	6,700	8.7	3,300	4.3	2,700	3.5
Physical sciences	8,400	100.0	4,700	56.0	4,700	56.0			1,400	16.7	400	4.8	1,000	11.9	200	2.4	400	4.8	400	4.8
Men	6,000	71.4	3,400	56.7	3,400	56.7			1,000	16.7	200	3.3	800	13.3	200	3.3	300	5.0	300	5.0
Women	2,400	28.6	1,300	54.2	1,300	54.2			500	20.8	200	8.3	300	12.5	100	4.2	100	4.2	100	4.2
Math/Statistics	11,900	100.0	6,100	51.3	5,900	49.6	200	1.7	3,300	27.7	500	4.2	2,800	23.5	300	2.5	900	7.6	500	4.2
Men	6,400	53.8	3,400	53.1	3,300	51.6	200	3.1	1,800	28.1	500	7.8	1,300	20.3	100	1.6	300	4.7	300	4.7
Women	5,500	46.2	2,700	49.1	2,600	47.3	100	1.8	1,500	27.3	100	1.8	1,400	25.5	200	3.6	600	10.9	300	5.5
Computer science	35,500	100.0	30,100	84.8	29,600	83.4	500	1.4	1,500	4.2	1,100	3.1	400	1.1	400	1.1	1,400	3.9	900	2.5
Men	24,000	67.6	20,700	86.3	20,300	84.6	400	1.7	800	3.3	500	2.1	200	0.8	200	0.8	700	2.9	600	2.5
Women	11,500	32.4	9,400	81.7	9,300	80.9	100	0.9	800	7.0	600	5.2	100	0.9	100	0.9	600	5.2	300	2.6
Environ science	3,600	100.0	2,200	61.1	2,100	58.3	100	2.8	400	11.1	200	5.6	200	5.6	100	2.8	200	5.6	200	5.6
Men	3,000	83.3	1,900	63.3	1,800	60.0	100	3.3	300	10.0	200	6.7	100	3.3			100	3.3	200	6.7
Women	600	16.7	300	50.0	300	50.0			100	16.7			100							
Life sciences	28,000	100.0	13,900	49.6	12,200	43.6	1,700	6.1	4,600	16.4	1,700	6.1	2,900	10.4	1,400	5.0	1,100	3.9	1,300	4.6
Men	14,500	51.8	7,600	52.4	700	4.8	600	4.1	1,600	11.0	700	4.8	900	6.2	500	3.4	600	4.1	1,000	6.9
Women	13,500	48.2	6,300	46.7	5,200	38.5	1,000	7.4	3,000	22.2	1,000	7.4	2,000	14.8	900	6.7	400	3.0	300	2.2
Psychology	28,200	100.0	16,300	57.8	15,600	55.3	700	2.5	3,200	11.3	800	2.8	2,400	8.5	3,800	13.5	200	0.7	1,500	5.3
Men	9,900	35.1	6,700	67.7	6,400	64.6	200	2.0	400	4.0	200	2.0	200	2.0	900	9.1			600	6.1
Women	18,300	64.9	9,600	52.5	9,200	50.3	500	2.7	2,800	15.3	600	3.3	2,200	12.0	2,900	15.8	200	1.1	800	4.4
Social sciences	56,700	100.0	39,300	69.3	36,900	65.1	2,300	4.1	4,500	7.9	1,900	3.4	2,500	4.4	3,400	6.0	3,000	5.3	2,600	4.6
Men	31,200	55.0	22,800	73.1	21,700	69.6	1,100	3.5	1,200	3.8	600	1.9	600	1.9	1,000	3.2	1,800	5.8	1,700	5.4
Women	25,500	45.0	16,500	64.7	15,200	59.6	1,300	5.1	3,200	12.5	1,300	5.1	1,900	7.5	2,500	9.8	1,200	4.7	900	3.5
Total engineering	68,700	100.0	54,300	79.0	52,900	77.0	1,400	2.0	2,200	3.2	1,600	2.3	600	0.9	300	0.4	5,500	8.0	2,200	3.2
Men	57,700	84.0	48,100	83.4	44,900	77.8	1,400	2.4	1,600	2.8	1,300	2.3	300	0.5	300	0.5	4,400	7.6	1,500	2.6
Women	11,000	16.0	6,400	58.2	8,000	72.7			600	5.5	400	3.6	300	2.7			1,200	10.9	600	5.5

(1) Does not include ~~Professional Services~~, Other, or No Report

NOTES: Detail may not add to total because of rounding. Blank spaces indicate too few to estimate.

SOURCE: Characteristics of Recent Science and Engineering Graduates: 1988, National Science Foundation, NSF 90–305

TABLE 4-16

EMPLOYED 1986 MASTERS GRADUATES BY FIELD OF DEGREE, PRIMARY WORK ACTIVITY AND SEX IN 1988

Field of Degree and Sex	Total Employed		Research and Development							Other Work Activity (1)										
	Number	%	Total	%	Basic research	%	Applied research	%	Develop-ment	%	Manage-ment	%	Teaching	%	Production/ Inspect.	%	Rpt/Stat Comp work	%	Sales	%
Total, all fields	43,000	100.0	13,800	32.1	900	2.1	3,800	8.8	9,100	21.2	7,400	17.2	4,900	11.4	4,100	9.5	6,400	14.9	800	1.9
Men	30,200	70.2	10,800	35.8	700	2.3	3,000	9.9	7,000	23.2	5,400	17.9	2,100	7.0	3,400	11.3	4,500	14.9	600	2.0
Women	12,800	29.8	3,000	23.4	200	1.6	800	6.3	2,000	15.6	2,000	15.6	2,800	21.9	700	5.5	1,900	14.8	200	1.6
Total sciences	29,600	100.0	7,300	24.7	700	2.4	2,500	8.4	4,100	13.9	5,500	18.6	4,400	14.9	2,000	6.8	5,400	18.2	600	2.0
Men	18,600	62.8	5,200	28.0	600	3.2	1,800	9.7	2,800	15.1	3,800	20.4	1,700	9.1	1,500	8.1	3,800	20.4	500	2.7
Women	11,000	37.2	2,100	19.1	100	0.9	700	6.4	1,300	11.8	1,800	16.4	2,800	25.5	500	4.5	1,700	15.5	200	1.8
Physical sciences	1,900	100.0	700	36.8	100	5.3	400	21.1	300	15.8	300	15.8	300	15.8	300	15.8	200	10.5		
Men	1,300	68.4	600	46.2	100	7.7	300	23.1	200	15.4	100	7.7	200	15.4	200	15.4	200	15.4		
Women	600	31.6	100	16.7			100	16.7	100	16.7	200	33.3	100	16.7	100	16.7				
Math/Statistics	3,300	100.0	700	21.2	100	3.0	300	9.1	300	9.1	400	12.1	100	3.0	200	6.1	700	21.2	100	3.0
Men	2,100	63.6	500	23.8	100	4.8	300	14.3	200	9.5	400	19.0	300	14.3	200	9.5	600	28.6		
Women	1,200	36.4	200	16.7					100	8.3	100	8.3	700	58.3			100	8.3		
Computer science	9,200	100.0	3,200	34.8			300	3.3	2,900	31.5	1,600	17.4	500	5.4	2,800	30.4	2,800	30.4		
Men	6,500	70.7	2,400	36.9			200	3.1	2,100	32.3	1,000	15.4	300	4.6	1,900	29.2	1,900	29.2		
Women	2,700	29.3	800	29.6			100	3.7	700	25.9	600	22.2	200	7.4	800	29.6	800	29.6		
Environ science	1,800	100.0	600	33.3	100	5.6	300	16.7	100	5.6	200	11.1	100	5.6	300	16.7	300	16.7		
Men	1,400	77.8	400	28.6	100	7.1	300	21.4	100	7.1	200	14.3	100	7.1	200	14.3	200	14.3		
Women	400	22.2	200	50.0			100	25.0	100	25.0										
Life sciences	5,700	100.0	1,500	26.3	300	5.3	700	12.3	500	8.8	800	14.0	1,100	19.3	200	3.5	500	8.8	200	3.5
Men	3,200	56.1	800	25.0	200	6.3	400	12.5	200	6.3	600	18.8	500	15.6	200	6.3	200	6.3	100	3.1
Women	2,500	43.9	600	24.0			300	12.0	300	12.0	200	8.0	600	24.0	100	4.0	300	12.0	100	4.0
Psychology	2,200	100.0	200	9.1	100	4.5	100	4.5			600	27.3	400	18.2	200	9.1	100	4.5		
Men	700	31.8	100	14.3	100	14.3					100	14.3			200	28.6				
Women	1,400	63.6									400	28.6	300	21.4			100	7.1		
Social sciences	5,600	100.0	500	8.9			300	5.4	100	1.8	1,700	30.4	1,000	17.9	400	7.1	900	16.1	200	3.6
Men	3,400	60.7	300	8.8			300	8.8			1,400	41.2	300	8.8	200	5.9	600	17.6	200	5.9
Women	2,200	39.3	200	9.1			100	4.5			300	13.6	700	31.8	200	9.1	300	13.6		
Total engineering	13,500	100.0	6,500	48.1	200	1.5	1,300	9.6	5,000	37.0	1,900	14.1	500	3.7	2,100	15.6	900	6.7	200	1.5
Men	11,600	85.9	5,600	48.3	200	1.7	1,200	10.3	4,200	36.2	1,600	13.8	400	3.4	2,000	17.2	700	6.0	200	1.7
Women	1,800	13.3	900	50.0	100	5.6	100	5.6	800	44.4	300	16.7	100	5.6	100	5.6	200	11.1		

(1) Does not include Professional Services, Other, or No Report

NOTES: Detail may not add to total because of rounding. Blank spaces indicate too few to estimate.

SOURCE: Characteristics of Recent Science and Engineering Graduates: 1988, National Science Foundation, NSF 90-305

TABLE 4-17

EMPLOYED 1987 MASTERS GRADUATES BY FIELD OF DEGREE, PRIMARY WORK ACTIVITY AND SEX IN 1988

Field of Degree and Sex	Total Employed		Research and Development						Other Work Activity (1)									
	Number	%	Total	%	Basic research	%	Applied research	%	Develop-ment	%	Manage-ment	%	Teaching	%	Production/ Inspect.	%	Rpt/Stat Comp work	%	Sales	%
Total, all fields	43,700	100.0	15,100	34.6	1,200	2.7	4,400	10.1	9,400	21.5	7,600	17.4	5,000	11.4	3,400	7.8	6,900	15.8	1,100	2.5
Men	32,000	73.2	11,600	36.3	400	1.3	3,400	10.6	7,900	24.7	5,400	16.9	2,600	8.1	2,700	8.4	4,800	15.0	1,000	3.1
Women	11,700	26.8	3,400	29.1	800	6.8	1,000	8.5	1,600	13.7	1,900	16.2	2,400	20.5	700	6.0	2,100	17.9	100	0.9
Total sciences	29,800	100.0	7,500	25.2	1,100	3.7	2,900	9.7	3,500	11.7	5,800	19.5	4,600	15.4	2,000	6.7	5,900	19.8	900	3.0
Men	19,800	66.4	4,800	24.2	400	2.0	2,500	12.6	2,500	12.6	4,000	20.2	2,300	11.6	1,500	7.6	4,000	20.2	800	4.0
Women	10,000	33.6	2,700	27.0	800	8.0	900	9.0	1,000	10.0	1,700	17.0	2,300	23.0	500	5.0	1,800	18.0	100	1.0
Physical sciences	1,800	100.0	700	38.9	100	5.6	300	16.7	300	16.7	200	11.1	300	16.7	300	16.7	200	11.1	100	5.6
Men	1,300	72.2	500	38.5	100	7.7	200	15.4	200	15.4	200	15.4	200	15.4	300	23.1	100	7.7	100	7.7
Women	500	27.8	200	40.0	100	20.0	100	20.0					100	20.0			100	20.0		
Math/Statistics	3,600	100.0	500	13.9	100	2.8	100	2.8	300	8.3	900	25.0	1,100	30.6	200	5.6	900	25.0		
Men	2,600	72.2	300	11.5	100	3.8	100	3.8	200	7.7	800	30.8	500	19.2	200	7.7	600	23.1		
Women	1,100	30.6	100	9.1					100	9.1	100	9.1	600	54.5			300	27.3		
Computer science	10,800	100.0	3,500	32.4			800	7.4	2,700	25.0	1,900	17.6	700	6.5	600	5.6	3,300	30.6	200	1.9
Men	7,700	71.3	2,600	33.8			600	7.8	1,900	24.7	1,400	18.2	300	3.9	600	7.8	2,200	28.6	200	2.6
Women	3,100	28.7	900	29.0			200	6.5	700	22.6	600	19.4	400	12.9			1,100	35.5		
Environ science	1,200	100.0	300	25.0	100	8.3	200	16.7	100	8.3	200	16.7	100	8.3	200	16.7	100	8.3		
Men	900	75.0	200	22.2			100	11.1			100	11.1	100	11.1	200	22.2	100	11.1		
Women	300	25.0	200	66.7			100	33.3									100	33.3		
Life sciences	5,500	100.0	2,000	36.4	600	10.9	1,200	21.8	100	1.8	700	12.7	1,300	23.6	400	7.3	600	10.9	100	1.8
Men	3,300	60.0	1,000	30.3	100	3.0	900	27.3	100	3.0	500	15.2	600	18.2	200	6.1	400	12.1	100	3.0
Women	2,300	41.8	900	39.1	500	21.7	300	13.0	100	4.3	200	8.7	700	30.4	200	8.7	200	8.7		
Psychology	1,800	100.0	100	5.6	100	5.6					400	22.2	200	11.1			100	5.6		
Men	1,000	55.6	100	10.0							300	30.0								
Women	800	44.4									200	25.0	100	12.5			100	12.5		
Social sciences	5,000	100.0	400	8.0	100	2.0	300	6.0	100	2.0	1,500	30.0	900	18.0	300	6.0	800	16.0	400	8.0
Men	3,100	62.0	100	3.2			100	3.2			800	25.8	500	16.1	100	3.2	700	22.6	400	12.9
Women	1,900	38.0	300	15.8	100	5.3	200	10.5	100	5.3	600	31.6	400	21.1	200	10.5	100	5.3	100	5.3
Total engineering	13,900	100.0	7,600	54.7	100	0.7	1,500	10.8	6,000	43.2	1,800	12.9	300	2.2	1,400	10.1	1,100	7.9	200	1.4
Men	12,100	87.1	6,800	56.2			1,400	11.6	5,400	44.6	1,700	14.0	300	2.5	1,100	9.1	700	5.8	200	1.7
Women	1,700	12.2	700	41.2			100	5.9	600	35.3	200	11.8			300	17.6	300	17.6		

(1) Does not include Professional Services, Other, or No Report

NOTES: Detail may not add to total because of rounding. Blank spaces indicate too few to estimate.

SOURCE: Characteristics of Recent Science and Engineering Graduates: 1988, National Science Foundation, NSF 90-305

TABLE 4-18

EMPLOYED 1986 MASTERS GRADUATES BY TYPE OF EMPLOYER, FIELD OF DEGREE AND SEX IN 1988

Field of Degree and Sex	Total Employed		Type of Employer																	
			Business and Industry						Educational Institution						Non-profit		Federal		State/local	
	Number	%	Total	%	Industry	%	Self Employed	%	Total	%	4-yr College University	%	Other	%	Ogran-ization	%	Government	%	Government	%
Total, all fields	43,000	100.0	24,400	56.7	23,400	54.4	1,000	2.3	7,000	16.3	3,700	8.6	3,400	7.9	1,800	4.2	2,700	6.3	3,800	8.8
Men	30,200	70.2	19,200	63.6	18,600	61.6	600	2.0	3,600	11.9	2,300	7.6	1,300	4.3	900	3.0	2,100	7.0	2,100	7.0
Women	12,800	29.8	5,200	40.6	4,800	37.5	400	3.1	3,400	26.6	1,300	10.2	2,100	16.4	800	6.3	700	5.5	1,700	13.3
Total sciences	29,600	100.0	14,300	48.3	13,500	45.6	800	2.7	6,300	21.3	3,100	10.5	3,200	10.8	1,500	5.1	1,900	6.4	3,100	10.5
Men	18,600	62.8	10,500	56.5	10,000	53.8	500	2.7	2,900	15.6	1,800	9.7	1,100	5.9	700	3.8	1,400	7.5	1,600	8.6
Women	11,000	37.2	3,800	34.5	3,500	31.8	400	3.6	3,300	30.0	1,300	11.8	2,000	18.2	800	7.3	500	4.5	1,500	13.6
Physical sciences	1,900	100.0	900	47.4	900	47.4			500	26.3	300	15.8	200	10.5			100	5.3	100	5.3
Men	1,300	68.4	700	53.8	700	53.8			300	23.1	100	7.7	100	7.7			100	7.7	100	7.7
Women	600	31.6	300	50.0	200	33.3			200	33.3	100	16.7	100	16.7						
Math/Statistics	3,300	100.0	1,400	42.4	1,400	42.4	100	3.0	1,200	36.4	500	15.2	700	21.2			100	3.0	100	3.0
Men	2,100	63.6	1,100	52.4	1,100	52.4	100	4.8	400	19.0	200	9.5	200	9.5			100	4.8		
Women	1,200	36.4	300	25.0	300	25.0			800	66.7	300	25.0	500	41.7					100	8.3
Computer science	9,200	100.0	7,200	78.3	6,900	75.0	200	2.2	900	9.8	600	6.5	200	2.2			300	3.3	400	4.3
Men	6,500	70.7	5,300	81.5	5,200	80.0	100	1.5	500	7.7	500	7.7					100	1.5	200	3.1
Women	2,700	29.3	1,900	70.4	1,700	63.0	100	3.7	300	11.1	100	3.7	200	7.4			200	7.4	200	7.4
Environ science	1,800	100.0	1,300	72.2	1,200	66.7			200	11.1	100	5.6	100	5.6			200	11.1	100	5.6
Men	1,400	77.8	1,000	71.4	1,000	71.4			100	7.1	100	7.1					100	7.1	100	7.1
Women	400	22.2	200	50.0	200	50.0			100	25.0							100			
Life sciences	5,700	100.0	1,800	31.6	1,600	28.1	200	3.5	1,700	29.8	800	14.0	900	15.8	200	3.5	300	5.3	1,000	17.5
Men	3,200	56.1	1,200	37.5	1,100	34.4	200	6.3	900	28.1	500	15.6	400	12.5	100	3.1	200	6.3	400	12.5
Women	2,500	43.9	600	24.0	500	20.0	100	4.0	800	32.0	300	12.0	500	20.0			100	4.0	600	24.0
Psychology	2,200	100.0	300	13.6	200	9.1			700	31.8	200	9.1	500	22.7	500	22.7	200	9.1	100	4.5
Men	700	31.8	200	28.6	100	14.3			100	14.3	100	14.3			100	14.3	200			
Women	1,400	63.6	100	7.1	100	7.1			500	35.7	100	7.1	500	35.7	400	28.6			100	7.1
Social sciences	5,600	100.0	1,400	25.0	1,200	21.4	200	3.6	1,100	19.6	600	10.7	600	10.7	800	14.3	600	10.7	1,300	23.2
Men	3,400	60.7	1,000	29.4	800	23.5	100	2.9	500	14.7	300	8.8	200	5.9	300	8.8	500	14.7	900	26.5
Women	2,200	39.3	500	22.7	400	18.2	100	4.5	600	27.3	300	13.6	300	13.6	400	18.2	100	4.5	500	22.7
Total engineering	13,500	100.0	10,100	74.8	9,900	73.3	200	1.5	800	5.9	600	4.4	200	1.5	300	2.2	900	6.7	700	5.2
Men	11,600	85.9	8,700	75.0	8,500	73.3	200	1.7	700	6.0	500	4.3	200	1.7	300	2.6	700	6.0	500	4.3
Women	1,800	13.3	1,400	77.8	1,400	77.8			100	5.6							100	5.6	200	11.1

(1) Does not include Other or No Report

NOTES: Detail may not add to total because of rounding. Blank spaces indicate too few to estimate.

SOURCE: Characteristics of Recent Science and Engineering Graduates: 1988, National Science Foundation, NSF 90–305

TABLE 4-19

EMPLOYED 1987 MASTERS GRADUATES BY TYPE OF EMPLOYER, FIELD OF DEGREE AND SEX IN 1988

Field of Degree and Sex	Total Employed		Type of Employer															
			Business and Industry						Educational Institution						Non-profit			
	Number	%	Total	%	Industry	%	Self Employed	%	Total	%	4-yr College University	%	Other	%	Ogran-ization	%	Federal Government	%	State/local Government	%
Total, all fields	43,700	100.0	25,200	57.7	24,300	55.6	900	2.1	7,400	16.9	4,000	9.2	3,400	7.8	1,400	3.2	2,300	5.3	2,900	6.6
Men	32,000	73.2	20,000	62.5	19,300	60.3	700	2.2	4,100	12.8	2,500	7.8	1,600	5.0	600	1.9	1,700	5.3	1,900	5.9
Women	11,700	26.8	5,200	44.4	5,000	42.7	200	1.7	3,400	29.1	1,500	12.8	1,800	15.4	700	6.0	600	5.1	1,000	8.5
Total sciences	29,800	100.0	14,500	48.7	13,800	46.3	700	2.3	6,900	23.2	3,600	12.1	3,300	11.1	1,200	4.0	13,000	43.6	2,400	8.1
Men	19,800	66.4	10,700	54.0	10,200	51.5	500	2.5	3,600	18.2	2,100	10.6	1,500	7.6	500	2.5	900	4.5	1,500	7.6
Women	10,000	33.6	3,800	38.0	3,600	36.0	200	2.0	3,300	33.0	1,500	15.0	1,800	18.0	700	7.0	400	4.0	900	9.0
Physical sciences	1,800	100.0	1,000	55.6	900	50.0			400	22.2	200	11.1	200	11.1	100		100	5.6	100	5.6
Men	1,300	72.2	800	61.5	800	61.5			200	15.4	100	7.7	100	7.7			100	7.7	100	7.7
Women	500	27.8	100	20.0	100	20.0			200	40.0			100	20.0					100	20.0
Math/Statistics	3,600	100.0	1,400	38.9	1,300	36.1	100	2.8	1,100	30.6	400	11.1	700	19.4	100	2.8	100	2.8	100	2.8
Men	2,600	72.2	1,100	42.3	1,000	38.5	100	3.8	500	19.2	300	11.5	200	7.7	100	3.8	100	3.8	100	3.8
Women	1,100	30.6	300	27.3	300	27.3			600	54.5	100	9.1	500	45.5	100	9.1				
Computer science	10,800	100.0	8,100	75.0	8,000	74.1	100	0.9	1,200	11.1	800	7.4	400	3.7	100	0.9	200	1.9	300	2.8
Men	7,700	71.3	5,800	75.3	5,700	74.0	100	1.3	700	9.1	600	7.8	200	2.6	100	1.3	100	1.3	200	2.6
Women	3,100	28.7	2,300	74.2	2,200	71.0			500	16.1	200	6.5	300	9.7			100	3.2	100	3.2
Environ science	1,200	100.0	600	50.0	600	50.0	100	8.3	100	8.3	100	8.3	100	8.3			100	8.3	200	16.7
Men	900	75.0	500	55.6	400	44.4	100	11.1	100	11.1	100	11.1					100	11.1	100	11.1
Women	300	25.0	100	33.3	100	33.3											100		100	
Life sciences	5,500	100.0	1,700	30.9	1,400	25.5	300	5.5	2,400	43.6	1,200	21.8	1,200	21.8	300	5.5	200	3.6	500	9.1
Men	3,300	60.0	1,100	33.3	1,000	30.3	200	6.1	1,300	39.4	600	18.2	600	18.2	100	3.0	100	3.0	400	12.1
Women	2,300	41.8	600	26.1	500	21.7	100	4.3	1,100	47.8	500	21.7	600	26.1	200	8.7	100	4.3	100	4.3
Psychology	1,800	100.0	300	16.7	200	11.1	100	5.6	600	33.3	400	22.2	200	11.1	200	11.1			200	11.1
Men	1,000	55.6	200	20.0	200	20.0	100	10.0	300	30.0	200	20.0	100	10.0	100	10.0			100	10.0
Women	800	44.4	100	12.5	100	12.5			300	37.5	100	12.5	200	25.0	200	25.0			100	12.5
Social sciences	5,000	100.0	1,400	28.0	1,300	26.0	100	2.0	1,200	24.0	600	12.0	500	10.0	400	8.0	500	10.0	1,100	22.0
Men	3,100	62.0	1,100	35.5	1,100	35.5			500	16.1	200	6.5	300	9.7	200	6.5	400	12.9	600	19.4
Women	1,900	38.0	300	15.8	300	15.8			700	36.8	400	21.1	200	10.5	300	15.8	100	5.3	500	26.3
Total engineering	13,900	100.0	10,700	77.0	10,500	75.5	200	1.4	500	3.6	400	2.9	100	0.7	200	1.4	1,000	7.2	400	2.9
Men	12,100	87.1	9,300	76.9	9,100	75.2	200	1.7	500	4.1	400	3.3	100	0.8	100	0.8	800	6.6	400	3.3
Women	1,700	12.2	1,400	82.4	1,400	82.4											200	11.8	100	5.9

(1) Does not include Other or No Report

NOTES: Detail may not add to total because of rounding. Blank spaces indicate too few to estimate.

SOURCE: Characteristics of Recent Science and Engineering Graduates: 1990, National Science Foundation, NSF 91–121

TABLE 4-20

SELECTED CHARACTERISTICS FOR 1988 AND 1989 BACHELOR'S DEGREE RECIPIENTS IN SCIENCE AND ENGINEERING, 1990

Field	Number of Graduates	Full–time Graduate Students	Graduates Employed			
			In S&E	Non–S&E	Not Employed	Median Salary
Total S&E	**136,600**	**23%**	**61%**	**13%**	**4%**	**$37,000**
Total Sciences	**93,700**	**25**	**55**	**16**	**4**	**33,800**
Physical Sciences	9,200	41	49	8	2	34,900
Math/Statistics	10,600	18	67	13	2	32,800
Computer Sciences	22,200	9	78	10	3	42,100
Environmental Sciences	5,200	21	71	6	2	33,800
Life Sciences	19,300	35	47	15	4	26,900
Psychology	7,300	34	36	26	4	32,000
Social Sciences	19,900	26	37	30	7	31,000
Total Engineering	**42,900**	**17**	**73**	**6**	**3**	**41,400**
Civil	4,700	11	85	4	0	35,200
Electrical/Electronics	13,800	19	72	4	5	46,500
Induistrial	2,600	8	62	23	8	40,300
Mechanical	8,000	15	79	5	1	42,100

Note: Because of rounding, percents may not add to 100.

TABLE 4-21

SELECTED CHARACTERISTICS FOR 1988 AND 1989 MASTER'S DEGREE RECIPIENTS IN SCIENCE AND ENGINEERING, 1990

Field	Number of Graduates	Full–time Graduate Students	Graduates Employed			
			In S&E	Non–S&E	Not Employed	Median Salary
Total S&E	**136,600**	**23%**	**61%**	**13%**	**4%**	**$37,000**
Total Sciences	**93,700**	**25**	**55**	**16**	**4**	**33,800**
Physical Sciences	9,200	41	49	8	2	34,900
Math/Statistics	10,600	18	67	13	2	32,800
Computer Sciences	22,200	9	78	10	3	42,100
Environmental Sciences	5,200	21	71	6	2	33,800
Life Sciences	19,300	35	47	15	4	26,900
Psychology	7,300	34	36	26	4	32,000
Social Sciences	19,900	26	37	30	7	31,000
Total Engineering	**42,900**	**17**	**73**	**6**	**3**	**41,400**
Civil	4,700	11	85	4	0	35,200
Electrical/Electronics	13,800	19	72	4	5	46,500
Induistrial	2,600	8	62	23	8	40,300
Mechanical	8,000	15	79	5	1	42,100

Note: Because of rounding, percents may not add to 100.

SOURCE: Totals for 1958 through 1971 are based on estimates by Adolph Wilburn. Totals for 1972 through 1990 are from the National Research Council.

TABLE 4-22

BLACKS AMONG U.S. DOCTORATES AWARDED FROM 1958 THROUGH 1990

FIELD	All PhDs	% of Total	Black	% of Black	Blacks as % of Total
TOTAL ALL FIELDS	761,338	100.0	21,644	100.0	2.84
Physical Sci. & Math	122,351	16.1	1165	5.4	0.95
Engineering	64,995	8.5	448	2.1	0.69
Life Sciences	122,881	16.1	1858	8.6	1.51
Social Sciences	147,674	19.4	3910	18.1	2.65
Arts & Humanities	101,807	13.4	1988	9.2	1.95
Education	164,850	21.7	11070	51.1	6.72
Professional Fields	36,780	4.8	1205	5.6	3.28

Source: Highlights from the 1989 Survey of Humanities Doctorates, National Research Council

TABLE 4-23

DEMOGRAPHIC CHARACTERSITICS OF HUMANITIES Ph.D.s (1946–88 GRADUATES) BY FIELD OF DOCTORATE, 1989 (in percent)

Demographic Characteristics	All Fields	Amer History	Other History	Art History	Music	Speech/ Theater	Phil– osophy	Engl/ Amer Lang & Lit	Class– ical Lang & Lit	Modern Lang & Lit	Other Human
Total Population	100,700	10,000	12,700	3,100	8,300	4,200	7,500	26,000	2,000	17,400	9,600
Sex											
Men	68.3	84.5	78.7	45.5	75.5	73.2	83.8	62.6	70.0	54.3	65.3
Women	31.7	15.5	21.3	54.5	24.5	26.8	16.2	37.4	30.0	45.7	34.7
Racial/Ethnic Group											
White	92.9	95.8	93.4	93.5	93.7	95.0	95.5	96.1	98.6	84.3	90.8
Minority Goup	6.8	3.9	6.5	6.3	5.9	4.5	4.4	3.8	1.4	15.4	8.2
Hispanic	3.2	0.5	2.3	1.7	1.1	0.6	1.6	1.3	0.5	11.7	2.0
Black	1.8	2.4	1.8	1.0	3.3	2.8	0.6	1.6	0.6	1.5	2.4
Asian	1.6	0.9	1.9	3.3	1.4	0.5	1.9	0.8	0.0	2.0	3.5
American Indian	0.2	0.1	0.6	0.3	0.2	0.7	0.3	0.1	0.4	0.2	0.2
Other/No Report	0.3	0.3	0.1	0.2	0.4	0.4	0.1	0.2	0.0	0.3	1.0

SOURCE: Characteristics of Doctoral Scientists and Engineers in the United States: 1987–89, National Science Foundation

TABLE 4-24

SEX & RACE/ETHNICITY OF DOCTORAL SCIENTISTS & ENGINEERS IN THE U.S., 1973–89

Year	Total	Men	Women	%W	White	%Wh	Black	%Bl	Asian	%A	Indian	%I	Hispanic	%H
1973	238,831	217,998	20,833	8.7	218,939	91.7	2,200	0.9	10,861	4.5	171	0.07	1,731	0.7
1975	270,355	244,844	25,511	9.4	245,835	90.9	2,628	1.0	13,948	5.2	214	0.08	2,139	0.8
1977	304,067	272,299	31,768	10.4	275,852	90.7	2,812	0.9	16,757	5.5	244	0.08	2,826	0.9
1979	332,918	294,927	37,991	11.4	302,624	90.9	3,523	1.1	23,614	7.1	404	0.12	4,228	1.3
1981	364,157	318,445	45,712	12.6	328,080	90.1	4,513	1.2	28,366	7.8	421	0.12	5,069	1.4
1983	395,033	340,482	54,551	13.8	354,432	89.7	5,277	1.3	31,076	7.9	443	0.11	5,716	1.4
1985	424,616	360,609	64,007	15.1	378,834	89.2	5,935	1.4	35,564	8.4	534	0.13	6,206	1.5
1987	451,438	378,015	73,423	16.3	403,421	89.4	6,691	1.5	37,530	8.3	586	0.13	7,202	1.6
1989	448,643	371,483	77,160	17.2	397,169	88.5	7,153	1.6	41,106	9.2	768	0.17	8,144	1.8

SOURCE: Immigration and Naturalization Service, U.S. Dept of Justice and National Science Foundation, SRS in Immigrant Scientists and Engineers, 1988, National Science Foundation

TABLE 4-25

IMMIGRANT SCIENTISTS & ENGINEERS BY MAJOR S/E GROUP & PERCENT ADMITTED BY ADJUSTING STATUS, 1966 – 1988

YEAR	Total all Immigrants	Engineers	Natural Scientists	Math and Computer Scientists	Social Scientists	Admitted via Adjusted Status*
1966	7,200	4,900	800	200	300	32%
1967	12,500	8,800	2,800	400	500	41
1968	13,100	9,300	2,800	400	600	32
1969	10,300	7,200	2,400	200	500	34
1970	13,300	9,300	2,900	300	800	41
1971	13,100	9,000	3,100	400	600	45
1972	11,200	7,400	2,900	300	600	48
1973	6,500	4,400	1,600	100	400	34
1974	6,400	3,900	1,300	600	600	34
1975	7,400	4,600	1,500	700	600	34
1976	7,700	5,100	1,500	500	600	33
1977	8,200	5,200	1,800	600	600	32
1978	10,600	6,800	2,100	900	800	40
1979--81 not available						
1982	12,200	7,900	1,800	1,800	700	56
1983	10,500	6,800	1,500	1,600	600	52
1984	9,600	6,100	1,400	1,500	600	46
1985	10,900	8,100	1,300	1,000	500	49
1986	11,200	8,400	1,300	1,000	500	48
1987	11,300	8,300	1,300	1,200	500	44
1988	10,900	8,100	1,200	1,200	500	44

* Scientists and Engineers who changed to immigrant status while resident in the U.S. Includes former intra–company transferees, students, exchange visitors and temporary workers.

SOURCE: Women and Minorities in Science and Engineering, National Science Foundation, NSF 90–301, January 1990

TABLE 4-26

PHYSICAL DISABILITIES AND EMPLOYMENT STATUS OF DISABLED SCIENTISTS AND ENGINEERS, 1986

			Disability								Employment Status					
	Total		Visual		Auditory		Ambulatory		Other		In Labor Force		Total Employed		Un–employed	
Field	Disabled	V%	No.	%Vis	No.	%Aud	No.	%Am	No.	%Oth	No.	%In	No.	%Emp	No.	%Un
All Fields	94,200	100	21,100	22.4	16,500	17.5	20,500	21.8	36,100	38.3	71,400	75.8	70,300	98.5	1,100	1.5
Scientists	40,400	42.9	9,700	24.0	7,600	18.8	9,800	24.3	13,400	33.2	34,500	85.4	34,200	99.1	300	0.9
Physical	7,600	8.1	2,500	32.9	1,100	14.5	1,400	18.4	2,600	34.2	5,300	69.7	5,300	100.0	*	0.0
Mathematical	1,600	1.7	300	18.8	400	25.0	500	31.3	500	31.3	1,600	100.0	1,500	93.8	100	6.3
Computer	9,200	9.8	1,800	19.6	2,700	29.3	3,000	32.6	1,700	18.5	9,100	98.9	9,100	100.0	*	0.0
Environmental	3,000	3.2	200	6.7	400	13.3	1,300	43.3	1,100	36.7	2,000	66.7	2,000	100.0	*	0.0
Life	6,300	6.7	1,300	20.6	1,200	19.0	1,700	27.0	2,100	33.3	5,700	90.5	5,600	98.2	100	1.8
Psychologists	6,100	6.5	1,100	18.0	1,400	23.0	1,200	19.7	2,400	39.3	5,400	88.5	5,400	100.0	*	0.0
Social	6,600	7.0	2,600	39.4	400	6.1	700	10.6	2,900	43.9	5,500	83.3	5,300	96.4	100	1.8
Engineers	53,800	57.1	11,400	21.2	8,900	16.5	10,800	20.1	22,700	42.2	36,900	68.6	36,100	97.8	800	2.2

Note: Detail may not add to totals because of rounding

SOURCE: Characteristics of Doctoral Scientists and Engineers in the United States, 1989, National Science Foundaton

TABLE 5-1

DOCTORAL SCIENTISTS AND ENGINEERS IN ACADEMIC INSTITUTIONS BY FIELD, RANK AND SEX, 1989

Fields	Total Faculty*	Professor		Associate Prof		Assistant Prof		Instructor/Lecturer		Adjunct Faculty		Other Faculty	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total Fields	220,942	90,205	41	50,550	23	38,687	18	4,435	2.0	3,920	1.8	17,996	8.1
Men	181,078	82,857	46	40,873	23	27,371	15	2,704	1.5	2,607	1.4	12,895	7.1
Women	39,864	7,348	18	9,677	24	11,316	28	1,731	4.3	1,313	3.3	5,101	12.8
All Scientists	195,981	78,877	40	45,372	23	34,701	18	4,094	2.1	3,388	1.7	16,735	8.5
Men	156,796	71,619	46	35,828	23	23,675	15	2,384	1.5	2,085	1.3	11,707	7.5
Women	39,185	7,258	19	9,544	24	11,026	28	1,710	4.4	1,303	3.3	5,028	12.8
Chemists	15,074	7,143	47	2,521	17	1,930	13	292	1.9	80	0.5	1,709	11.3
Men	13,213	6,700	51	2,201	17	1,591	12	147	1.1	25	0.2	1,354	10.2
Women	1,861	443	24	320	17	339	18	145	7.8	55	3.0	355	19.1
Physicists/Astron	13,825	5,906	43	1,781	13	1,346	10	257	1.9	184	1.3	1,644	11.9
Men	13,185	5,797	44	1,680	13	1,183	9	230	1.7	175	1.3	1,557	11.8
Women	640	109	17	101	16	163	25	27	4.2	9	1.4	87	13.6
Mathematicians	11,614	6,019	52	2,667	23	2,169	19	294	2.5	69	0.6	217	1.9
Men	10,498	5,709	54	2,324	22	1,811	17	253	2.4	57	0.5	194	1.8
Women	1,116	310	28	343	31	358	32	41	3.7	12	1.1	23	2.1
Statisticians	1,974	803	41	600	30	344	17	30	1.5	70	3.5	16	0.8
Men	1,765	770	44	523	30	258	15	23	1.3	70	4.0	16	0.9
Women	209	33	16	77	37	86	41	7	3.3				
Computer/Info Spec	6,349	1,606	25	1,884	30	1,726	27	42	0.7	91	1.4	380	6.0
Men	5,660	1,521	27	1,719	30	1,493	26	42	0.7	84	1.5	353	6.2
Women	689	85	12	165	24	233	34	0	0.0	7	1.0	27	3.9
Earth Scientists	5,519	2,348	43	1,160	21	915	17	65	1.2	119	2.2	449	8.1
Men	4,985	2,291	46	1,054	21	711	14	46	0.9	104	2.1	353	7.1
Women	534	57	11	106	20	204	38	19	3.6	15	2.8	96	18.0
Oceanographers	1,354	544	40	269	20	154	11	2	0.1	36	2.7	236	17.4
Men	1,193	515	43	250	21	101	8			32	2.7	189	15.8
Women	161	29	18	19	12	53	33	2	1.2	4	2.5	47	29.2
Atmospheric Sci	952	268	28	196	21	171	18			35	3.7	151	15.9
Men	893	254	28	182	20	169	19			33	3.7	138	15.5
Women	59	14	24	14	24	2	3			2	3.4	13	22.0
Biological Sci	43,198	15,561	36	9,005	21	7,074	16	933	2.2	813	1.9	6,145	14.2
Men	32,934	14,016	43	6,951	21	4,705	14	458	1.4	427	1.3	3,982	12.1
Women	10,264	1,545	15	2,054	20	2,369	23	475	4.6	386	3.8	2,163	21.1
Agricultural Sci	8,714	4,135	47	1,996	23	1,536	18	46	0.5	63	0.7	760	8.7
Men	8,080	4,075	50	1,838	23	1,309	16	42	0.5	60	0.7	593	7.3
Women	634	60	9	158	25	227	36	4	0.6	3	0.5	167	26.3
Medical Scientists	16,774	5,181	31	3,993	24	4,162	25	506	3.0	414	2.5	1,531	9.1
Men	11,188	4,196	38	2,572	23	2,179	19	315	2.8	284	2.5	1,016	9.1
Women	5,586	985	18	1,421	25	1,983	35	191	3.4	130	2.3	515	9.2
Psychologists	22,930	8,958	39	5,689	25	4,431	19	588	2.6	555	2.4	1,684	7.3
Men	15,267	7,416	49	3,966	26	2,343	15	185	1.2	164	1.1	815	5.3
Women	7,663	1,542	20	1,723	22	2,088	27	403	5.3	391	5.1	869	11.3
Economists	12,372	6,106	49	3,220	26	2,209	18	214	1.7	195	1.6	351	2.8
Men	10,940	5,802	53	2,764	25	1,734	16	140	1.3	142	1.3	292	2.7
Women	1,432	304	21	456	32	475	33	74	5.2	53	3.7	59	4.1
Sociologists/Anthro.	10,488	4,232	40	3,449	33	1,709	16	261	2.5	230	2.2	371	3.5
Men	7,292	3,376	46	2,452	34	946	13	87	1.2	127	1.7	141	1.9
Women	3,196	856	27	997	31	763	24	174	5.4	103	3.2	230	7.2
Other Social Sci	24,844	10,067	41	6,942	28	4,825	19	564	2.3	434	1.7	1,091	4.4
Men	19,703	9,181	47	5,352	27	3,142	16	416	2.1	301	1.5	714	3.6
Women	5,141	886	17	1,590	31	1,683	33	148	2.9	133	2.6	377	7.3
Engineers	24,961	11,328	45	5,178	21	3,986	16	341	1.4	532	2.1	1,261	5.1
Men	24,282	11,238	46	5,045	21	3,696	15	320	1.3	522	2.1	1,188	4.9
Women	679	90	13	133	20	290	43	21	3.1	10	1.5	73	10.8

* Includes "Does not Apply" and "No Report". Blanks indicate no cases reported.

SOURCE: Biennial Survey of Doctorates, 1989, National Research Council, unpublished.

TABLE 5-2

PhD SCIENTISTS AND ENGINEERS IN EDUCATIONAL INSTITUTIONS BY FIELD, PRIMARY WORK ACTIVITY AND SEX, 1989

FIELD	Total Em-ployed*	Mgt/Admin		R & D		Teaching		Prof Services		Consulting	
		No.	%	No.	%	No.	%	No.	%	No.	%
TOTAL ALL FIELDS	230,932	25,235	10.9	79,738	34.5	110,836	48.0	7,385	3.2	711	0.3
ALL SCIENTISTS	205,810	21,440	10.4	71,453	34.7	98,382	47.8	7,385	3.6	594	0.3
Chemists	16,100	1,283	8.0	5,687	35.3	8,771	54.5	73	0.5		
Physists/Astron	14,176	1,394	9.8	6,806	48.0	5,483	38.7	31	0.2		
Mathematicians	12,313	952	7.7	2,803	22.8	8,415	68.3			7	0.1
Statisticians	1,987	75	3.8	412	20.7	1,330	66.9			26	1.3
Computer/Info Spec	6,553	794	12.1	1,805	27.5	3,448	52.6	3	0.0	40	0.6
Earth Scientists	5,690	491	8.6	2,120	37.3	2,939	51.7			11	0.2
Oceanographers	1,359	294	16.0	780	60.5	262	21.0				
Atmospheric Sci	952	74	7.8	690	72.5	188	19.7				
Biological Sci	44,585	2,884	6.5	25,806	57.9	14,434	32.4	387	0.9	134	0.3
Agricultural Sci	8,927	943	10.6	4,937	55.3	2,042	22.9	74	0.8	71	0.8
Medical Scientistrs	16,968	2,559	17.0	6,134	34.1	5,109	33.2	2,380	11.5	77	0.2
Psychologists	26,425	3,233	12.2	4,774	18.1	13,094	49.6	4,334	16.4	180	0.7
Economists	12,497	1,459	11.7	2,950	23.6	7,769	62.2	80	0.6		
Social/Anthrop	11,171	1,143	10.2	1,750	15.7	7,954	71.2			31	0.3
Other Social Sci	26,108	3,862	14.8	3,999	15.3	17,144	65.7	23	0.1	17	0.1
ENGINEERS	25,122	3,795	15.1	8,285	33.0	12,454	49.6			117	0.5
MEN											
TOTAL ALL FIELDS	188,086	21,189	11.3	65,142	34.6	90,830	48.3	4,890	2.6	572	0.3
ALL SCIENTISTS	163,651	17,431	10.7	57,178	34.9	78,681	48.1	4,890	3.0	455	0.3
Chemists	13,967	1,133	8.1	4,969	35.6	7,569	54.2	65	0.5		
Physists/Astron	13,501	1,352	10.0	6,476	48.0	5,204	38.5	31	0.2		
Mathematicians	11,063	869	7.9	2,658	24.0	7,420	67.1			5	0.0
Statisticians	1,769	52	2.9	370	20.9	1,185	67.0			23	1.3
Computer/Info Spec	5,846	719	12.3	1,598	27.3	3,140	53.7	3	0.1	40	0.7
Earth Scientists	5,118	446	8.7	1,913	37.4	2,630	51.4			11	0.2
Oceanographers	1,193	269	22.5	688	57.7	219	18.4				
Atmospheric Sci	893	71	8.0	643	72.0	179	20.0				
Biological Sci	33,864	2,387	7.0	19,201	56.7	11,143	32.9	288	0.9	122	0.4
Agricultural Sci	8,287	907	10.9	4,540	54.8	1,893	22.8	74	0.9	71	0.9
Medical Scientistrs	11,256	1,642	14.6	4,414	39.2	2,751	24.4	1,940	17.2	43	0.4
Psychologists	17,448	2,386	13.7	3,027	17.3	9,061	51.9	2,406	13.8	109	0.6
Economists	11,060	1,398	12.6	2,613	23.6	6,772	61.2	80	0.7		
Social/Anthrop	7,703	861	11.1	1,029	13.3	5,630	72.8			31	0.4
Other Social Sci	20,654	2,939	14.2	3,039	14.7	13,885	67.2	3	0.0		
ENGINEERS	24,435	3,758	15.4	7,964	32.6	12,149	49.7	0	0.0	117	0.5
WOMEN											
TOTAL ALL FIELDS	42,846	4,046	9.4	14,596	34.1	20,006	46.7	2,495	5.8	139	0.3
ALL SCIENTISTS	42,159	4,009	9.5	14,275	33.9	19,701	46.7	2,495	5.9	139	0.3
Chemists	2,133	150	7.0	718	33.7	1,202	56.4	8	0.4		
Physists/Astron	675	42	6.2	330	48.9	279	41.3				
Mathematicians	1,250	83	6.6	145	11.6	995	79.6			2	0.2
Statisticians	218	23	10.6	42	19.3	145	66.5			3	1.4
Computer/Info Spec	707	75	10.6	207	29.3	308	43.6				
Earth Scientists	572	45	7.9	207	36.2	309	54.0				
Oceanographers	166	25	15.1	92	55.4	43	25.9				
Atmospheric Sci	59	3	5.1	47	79.7	9	15.3				
Biological Sci	10,721	497	4.6	6,605	61.6	3,291	30.7	99	0.9	12	0.1
Agricultural Sci	640	36	5.6	397	62.0	149	23.3				
Medical Scientistrs	5,712	917	16.1	1,720	30.1	2,358	41.3	440	7.7	34	0.6
Psychologists	8,977	847	9.4	1,747	19.5	4,033	44.9	1,928	21.5	71	0.8
Economists	1,437	61	4.2	337	23.5	997	69.4				
Social/Anthrop	3,438	282	8.2	721	21.0	2,324	67.6				
Other Social Sci	5,454	923	16.9	960	17.6	3,259	59.8	20	0.4	17	0.3
ENGINEERS	687	37	5.4	321	46.7	305	44.4				

* Includes Statistical Work/Computing, Product Related Activity, Sales and Other/ No Report.

SOURCE: Biennial Survey of Doctorates, 1987, National Research Council, unpublished.

TABLE 5-3

TENURE STATUS OF ACADEMICALLY EMPLOYED SCIENCE/ENGINEERING DOCTORATES BY FIELD OF PhD AND SEX, 1989

	Total Employed*			Tenured				In Tenure Track				Not in Tenure Track			
	Men	Women	%W	Men	%MT	Women	%WT	Men	%MTr	Women	%WTr	Men	%MNT	Women	%WNT
All Fields	181078	39864	22.0	107409	59.3	14415	36.2	24950	13.8	8548	21.4	13922	7.7	6893	17.3
Scientists	156796	39185	25.0	93553	59.7	14244	36.4	20789	13.3	8276	21.1	12520	8.0	6807	17.4
Physical	26398	2501	9.5	14792	56.0	850	34.0	2318	8.8	397	15.9	2140	8.1	432	17.3
Chemists	13213	1861	14.1	8160	61.8	668	35.9	1310	9.9	261	14.0	826	6.3	322	17.3
Phy/Astron	13185	640	4.9	6632	50.3	182	28.4	1008	7.6	136	21.3	1314	10.0	110	17.2
Mathematical	12263	1325	10.8	8439	68.8	730	55.1	1828	14.9	355	26.8	582	4.7	94	7.1
Mathematicians	10498	1116	10.6	7260	69.2	630	56.5	1535	14.6	279	25.0	487	4.6	91	8.2
Statisticians	1765	209	11.8	1179	66.8	100	47.8	293	16.6	76	36.4	95	5.4	3	1.4
Comp/Info Spec	5660	689	12.2	2529	44.7	205	29.8	1453	25.7	180	26.1	558	9.9	35	5.1
Environmental	7071	754	10.7	4009	56.7	219	29.0	877	12.4	207	27.5	564	8.0	164	21.8
Earth Scientists	4985	534	10.7	3027	60.7	156	29.2	594	11.9	158	29.6	295	5.9	108	20.2
Oceanographers	1193	161	13.5	584	49.0	40	24.8	135	11.3	47	29.2	185	15.5	51	31.7
Atmospheric	893	59	6.6	398	44.6	23	39.0	148	16.6	2	3.4	84	9.4	5	8.5
Life Scientists	52202	16484	31.6	28007	53.7	4877	29.6	6866	13.2	3334	20.2	5951	11.4	3599	21.8
Biological	32934	10264	31.2	17603	53.4	2875	28.0	3844	11.7	1474	14.4	3712	11.3	2650	25.8
Agricultural	8080	634	7.8	5153	63.8	203	32.0	1241	15.4	210	33.1	529	6.5	90	14.2
Medical	11188	5586	49.9	5251	46.9	1799	32.2	1781	15.9	1650	29.5	1710	15.3	859	15.4
Psychologists	15267	7663	50.2	9648	63.2	2846	37.1	1927	12.6	1374	17.9	1014	6.6	1161	15.2
Social	37935	9769	25.8	26129	68.9	4517	46.2	5520	14.6	2429	24.9	1711	4.5	1322	13.5
Economists	10940	1432	13.1	7624	69.7	665	46.4	1805	16.5	392	27.4	422	3.9	257	17.9
Social\Anthro	7292	3196	43.8	5272	72.3	1542	48.2	910	12.5	690	21.6	407	5.6	484	15.1
Other Social	19703	5141	26.1	13233	67.2	2310	44.9	2805	14.2	1347	26.2	882	4.5	581	11.3
Engineers	24282	679	2.8	13856	57.1	171	25.2	4161	17.1	272	40.1	1402	5.8	86	12.7
Aero/Astro	1239	19	1.5	647	52.2	4	21.1	176	14.2	3	15.8	67	5.4	2	10.5
Chemical	2068	83	4.0	1201	58.1	30	36.1	385	18.6	30	36.1	202	9.8	0	0.0
Civil	3568	74	2.1	2393	67.1	19	25.7	594	16.6	47	63.5	73	2.0	3	4.1
Elec/Electronic	4679	137	2.9	2685	57.4	44	32.1	1096	23.4	50	36.5	216	4.6	17	12.4
Materials	1935	72	3.7	1058	54.7	10	13.9	168	8.7	28	38.9	93	4.8	11	15.3
Mechanical	3504	72	2.1	1919	54.8	29	40.3	636	18.2	36	50.0	221	6.3	5	6.9
Nuclear	671	5	0.7	138	20.6	3	60.0	36	5.4		0.0	57	8.5		0.0
Systems Design	1101	32	2.9	649	58.9	7	21.9	133	12.1	14	43.8	7	0.6	3	9.4
Other	5517	185	3.4	3166	57.4	25	13.5	937	17.0	64	34.6	466	8.4	45	24.3

* Includes "Other" and "No Report".

SOURCE: Biennial Survey of Doctorates, 1987 and 1989, National Research Council, unpublished

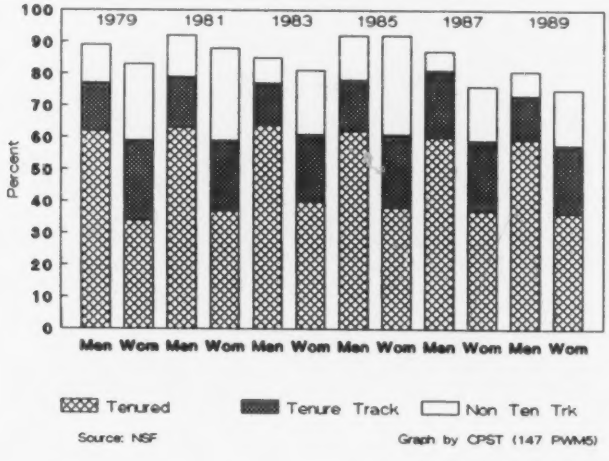
TABLE 5-4

CHANGE IN TENURE STATUS OF ACADEMICALLY EMPLOYED SCIENCE/ENGINEERING DOCTORATES BY FIELD OF PhD AND SEX, 1987–1989

	% Women of Total	% Tenured		% In Tenure Track		% Not in Tenure Tr.	
		Men	Women	Men	Women	Men	Women
1989							
All S/E Fields	18.0	59.3	36.2	13.8	21.4	7.7	17.3
Chemists	12.3	61.8	35.9	9.9	14.0	6.3	17.3
Physicists/Astronomers	4.6	50.3	28.4	7.6	21.3	10.0	17.2
Mathematical Scientists	9.8	68.8	55.1	14.9	26.8	4.7	7.1
Computer/Information Sp.	10.9	44.7	29.8	25.7	26.1	9.9	5.1
Environmental Scientists	9.6	56.7	29.0	12.4	27.5	8.0	21.8
Biological Scientists	23.8	53.4	28.0	11.7	14.4	11.3	25.8
Agricultural Scientists	7.3	63.8	32.0	15.4	33.1	6.5	14.2
Medical Scientists	33.3	46.9	32.2	15.9	29.5	15.3	15.4
Psychologists	33.4	63.2	37.1	12.6	17.9	6.6	15.2
Social Scientists	20.5	68.9	46.2	14.6	24.9	4.5	13.5
Engineers	2.7	57.1	25.2	17.1	40.1	5.8	12.7
1987							
All S/E Fields	16.7	59.8	36.1	14.1	22.0	7.2	17.5
Chemists	11.9	64.4	34.1	8.8	13.5	6.0	21.0
Physicists/Astronomers	4.3	51.2	28.4	8.0	18.5	8.0	16.9
Mathematical Scientists	9.4	70.7	52.0	14.3	26.9	4.1	8.2
Computer/Information Sp.	10.3	42.2	26.8	25.9	33.3	7.4	7.9
Environmental Scientists	7.9	54.3	26.0	15.4	25.1	8.4	20.9
Biological Scientists	22.4	56.1	28.3	13.9	17.0	10.1	24.2
Agricultural Scientists	6.9	65.2	26.6	15.1	31.1	7.1	18.0
Medical Scientists	28.8	46.3	32.0	17.4	17.2	11.8	10.0
Psychologists	30.4	62.6	37.7	11.3	20.3	8.0	15.5
Social Scientists	19.6	67.5	46.4	14.7	23.1	4.9	13.6
Engineers	2.4	57.7	25.5	16.6	40.9	5.2	12.7

CHART 5-1

TENURE STATUS OF PhD S/Es IN ACADEME, 1979 - 1989



SOURCE: Biennial Survey of Doctorates, 1989, National Research Council, unpublished.

TABLE 5-5

TENURE STATUS OF ACADEMICALLY EMPLOYED SCIENCE/ENGINEERING PhDs BY SEX, RACE AND FIELD, 1989

Field and Race	Total Employed*				Tenured			In Tenure Track			Not In Tenure Tr.		
	Number	No Wom	%W	V%	Number	H%	V%	Number	H%	V%	Number	H%	V%
All Fields	220,942	39864	18.0	100	121,824	55.1	100	33,498	15.2	100	20,818	9.4	100
White	197,879	35626	18.0	89.6	111,692	56.4	91.7	29,037	14.7	86.7	18,237	9.2	87.6
Black	3,993	1227	30.7	1.8	1,957	49.0	1.6	865	21.7	2.6	434	10.9	2.1
Am. Indian	406	89	21.9	0.2	198	48.8	0.2	99	24.4	0.3	19	4.7	0.1
Asian	17,663	2758	15.6	8.0	7,592	43.0	6.2	3,292	18.6	9.8	2,058	11.7	9.9
Scientists	195,981	39185	20.0	100	107,797	55.0	100	29,065	14.8	100	19,327	9.9	100
White	177,154	35071	19.8	80.2	99,342	56.1	81.5	25,644	14.5	76.6	17,088	9.6	82.1
Black	3,785	1220	32.2	1.7	1,893	50.0	1.6	759	20.1	2.3	414	10.9	2.0
Am. Indian	389	89	22.9	0.2	198	50.9	0.2	87	22.4	0.3	19	4.9	0.1
Asian	13,766	2644	19.2	6.2	6,003	43.6	4.9	2,445	17.8	7.3	1,739	12.6	8.4
Physical Scientists	28,899	2501	8.7	100	15,642	54.1	100	2,715	9.4	100	2,572	8.9	100
White	25,641	2106	8.2	88.7	14,391	56.1	92.0	2,221	8.7	81.8	2,072	8.1	80.6
Black	401	28	7.0	1.4	142	35.4	0.9	51	12.7	1.9	110	27.4	4.3
Am. Indian	74	1	1.4	0.3	65	87.8	0.4	2	2.7	0.1			
Asian	2,567	347	13.5	8.9	918	35.8	5.9	402	15.7	14.8	372	14.5	14.5
Mathematical Sci	13,588	1325	9.8	100	9,169	67.5	100	2,183	16.1	100	676	5.0	100
White	12,103	1107	9.1	89.1	8,415	69.5	91.8	1,781	14.7	81.6	569	4.7	84.2
Black	175	28	16.0	1.3	98	56.0	1.1	40	22.9	1.8	7	4.0	1.0
Am. Indian	7	2	28.6	0.1				7	100	0.3			
Asian	1,277	188	14.7	9.4	639	50.0	7.0	346	27.1	15.8	100	7.8	14.8
Comp/Info Spec	6,349	689	10.9	46.7	2734	43.1	29.8	1633	25.7	74.8	593	9.3	87.7
White	5,504	628	11.4	40.5	2445	44.4	26.7	1191	21.6	54.6	565	10.3	83.6
Black	7	2	28.6	0.1	5	71.4	0.1						
Am. Indian	12	1	8.3	0.1	5	41.7	0.1	6	50.0	0.3			
Asian	818	58	7.1	6.0	274	33.5	3.0	434	53.1	19.9	28	3.4	4.1
Environmental Sci	7,825	754	9.6	100	4228	54.0	100	1,084	13.9	100	728	9.3	100
White	7,339	706	9.6	93.8	3994	54.4	94.5	1,011	13.8	93.3	678	9.2	93.1
Black	31	5	16.1	0.4	5	16.1	0.1	19	61.3	1.8	1	3.2	0.1
Am. Indian	4	2	50.0	0.1	2				0.0	0.0	2		
Asian	439	39	8.9	5.6	225	51.3	5.3	54	12.3	5.0	40	9.1	5.5
Life Scientists	68,686	16484	24.0	100	32884	47.9	100	10,200	14.9	100	9,550	13.9	100
White	61,669	14532	23.6	89.8	30295	49.1	92.1	9,372	15.2	91.9	8,353	13.5	87.5
Black	1,035	340	32.9	1.5	468	45.2	1.4	209	20.2	2.0	111	10.7	1.2
Am. Indian	89	42	47.2	0.1	37	41.6	0.1	25	28.1	0.2	5	5.6	0.1
Asian	5,654	1426	25.2	8.2	2035	36.0	6.2	560	9.9	5.5	1,067	18.9	11.2
Psychologists	22,930	7663	33.4	33.4	12494	54.5	38.0	3301	14.4	32.4	2175	9.5	22.8
White	21,726	7072	32.6	31.6	12039	55.4	36.6	3035	14.0	29.8	2050	9.4	21.5
Black	609	322	52.9	0.9	230	37.8	0.7	163	26.8	1.6	58	9.5	0.6
Am. Indian	49	19	38.8	0.1	4	8.2	0.0				12	24.5	0.1
Asian	442	225	50.9	0.6	192	43.4	0.6	103	23.3	1.0	35	7.9	0.4
Social Scientists	47,704	9769	20.5	100	30646	64.2	100	7,949	16.7	100	3,033	6.4	100
White	43,172	8920	20.7	90.5	27763	64.3	90.6	7,033	16.3	88.5	2,801	6.5	92.4
Black	1,527	395	25.9	3.2	945	61.9	3.1	277	18.1	3.5	127	8.3	4.2
Am. Indian	184	22	12.0	0.4	98	53.3	0.3	49	26.6	0.6	5		
Asian	2,569	361	14.1	5.4	1720	67.0	5.6	546	21.3	6.9	97	3.8	3.2
Engineers	24,961	679	2.7	100	14027	56.2	100	4,433	17.8	100	1,488	6.0	100
White	20,725	558	2.7	83.0	12350	59.6	88.0	3,393	16.4	76.5	1,149	5.5	77.2
Black	208	7	3.4	0.8	64	30.8	0.5	106	51.0	2.4	20	9.6	1.3
Am. Indian	17			0.1				12					
Asian	3,897	114	2.9	15.6	1589	40.8	11.3	847	21.7	19.1	319	8.2	21.4

* Includes "Other" and "No Report". Blanks indicate no cases reported.

SOURCE: ***Humanities Doctorates in the United States, 1989*** National Research Council

TABLE 5-6

TENURE STATUS OF ACADEMICALLY EMPLOYED HUMANITIES PHDS (1946-88 graduates) BY FIELD, AGE AND SEX

[in thousands]

	All Fields		Eng/Amer Lang and Lit		History		Other Lang and Lit		Other Humanities	
Age and Tenure	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Total Employed (No.)	48,400	21,000	11,800	6,500	12,500	2,500	8,000	5,800	16,100	6,200
Tenured	70.6	49.3	72.2	53.4	71.9	49.7	73.8	47.7	66.8	46.3
Not Tenured	26.8	47.2	25.4	43.2	24.6	47.5	23.6	48.9	31.1	49.8
Tenure Track	12.1	20.9	12.2	15.2	8.4	23.9	13.1	23.2	14.5	23.5
Non-Tenure Track	6.2	13.7	2.1	13.6	8.1	9.5	6.4	14.9	7.4	14.3
Tenure Not Applicable	8.5	12.7	11.1	14.4	8.2	14.1	4.0	10.8	9.2	12.0
No Report	2.6	3.5	2.4	3.4	3.4	2.8	2.7	3.4	2.1	4.0
Age 35 and Under (No.)	2,700	1,700	600	400	500	200	400	400	1,200	600
Tenured	6.3	5.6	2.9	15.9	0.0	1.0	11.0	2.5	8.8	2.0
Not Tenured	91.3	93.7	95.2	84.1	100.0	99.0	86.6	96.3	87.6	96.9
Tenure Track	64.7	58.0	77.0	29.1	60.8	74.4	64.1	69.1	61.0	64.9
Non-Tenure Track	19.7	18.7	18.2	19.6	22.8	12.1	19.9	19.0	19.1	20.0
Tenure Not Applicable	6.8	17.1	0.0	35.3	16.4	12.6	2.6	8.2	7.5	12.0
No Report	2.4	0.7	2.0	0.0	0.0	0.0	2.4	1.1	3.6	1.1
Age 36 to 45 (No.)	13,600	8,000	3,500	1,900	2,800	1,000	2,000	2,400	5,200	2,800
Tenured	53.0	39.6	61.1	35.9	45.2	33.7	53.2	42.7	51.6	41.7
Not Tenured	43.8	57.2	34.7	60.8	50.6	64.6	43.0	54.5	46.6	54.3
Tenure Track	22.3	31.8	20.4	31.7	18.4	36.8	26.8	30.0	23.8	31.4
Non-Tenure Track	11.1	13.8	2.7	17.7	18.4	13.8	10.4	12.3	13.2	12.4
Tenure Not Applicable	10.4	11.7	11.6	11.4	13.7	14.0	5.8	12.2	9.6	10.5
No Report	3.2	3.2	4.2	3.3	4.2	1.6	3.8	2.8	1.8	4.0
Age 46 and Older (No.)	32,000	11,200	7,700	4,200	9,200	1,300	5,600	3,000	9,500	2,800
Tenured	83.7	63.0	83.0	65.6	83.9	68.9	86.0	58.8	82.8	60.5
Not Tenured	13.9	32.9	15.4	30.5	12.8	26.9	11.7	36.9	15.2	34.8
Tenure Track	3.2	7.6	3.0	6.5	2.5	6.5	4.2	10.5	3.3	6.6
Non-Tenure Track	2.9	12.5	0.7	10.4	4.2	6.0	4.0	16.2	2.8	14.9
Tenure Not Applicable	7.8	12.8	11.7	13.7	6.0	14.4	3.5	10.2	9.1	13.3
No Report	2.4	4.2	1.6	3.9	3.4	4.2	2.3	4.2	2.0	4.6

NOTE: Other Languages & Literature = Classical Languages and Modern Languages and Literature. Other Humanities = Art History, Music, Speech/Theater, Philosophy, and "Other Humanities." Numbers are rounded to the nearest hundred; therefore, sub categories may not add to total.

Source: Highlights from the 1989 Survey of Humanities Doctorates, National Research Council

TABLE 5-7

ACADEMICALLY EMPLOYED HUMANITIES Ph.D.s (1946–88 GRADUATES) BY ACADEMIC POSITION AND FIELD OF DOCTORATE, 1989
(in percent)

Academic Position	All Fields	Amer History	Other History	Art History	Music	Speech/ Theater	Phil– osophy	Engl/ Amer Lang & Lit	Class– ical Lang & Lit	Modern Lang & Lit	Other Human– ities
Total Employed	68,900	6,400	8,500	2,000	5,600	2,800	5,400	18,200	1,400	12,300	6,200
Faculty	88.2	91.0	86.2	88.9	89.1	91.5	89.3	87.7	87.9	88.7	85.5
Full Professor	41.0	53.3	48.4	35.3	36.8	46.0	43.0	43.9	40.2	32.9	27.5
Associate Professor	26.5	21.0	23.9	29.9	28.1	26.8	26.3	24.9	27.2	30.3	30.5
Assistant Professor	18.5	15.9	12.0	22.6	22.8	16.1	18.2	15.3	19.9	23.6	25.5
Instructor	2.2	0.8	1.9	1.0	1.4	2.6	1.8	3.5	0.6	1.8	2.0
Lecturer	2.2	0.6	1.1	1.8	2.4	3.0	2.5	1.6	2.3	3.5	3.7
Adjunct	2.9	2.0	5.3	4.6	2.4	1.3	2.4	3.4	2.5	1.9	2.8
Other/No Report	6.6	6.3	7.3	4.7	6.1	4.2	5.8	7.3	7.3	6.0	8.0

Source: Humanities Doctorates in the United States, 1989 Profile, National Research Council

TABLE 5-8

ACADEMICALLY EMPLOYED HUMANITIES Ph.D.s BY ACADEMIC POSITION, FIELD OF DOCTORATE, SEX AND COHORT, 1989
(In percent)

Year of Ph.D and Academic Position	All Fields		Eng/American Language & Lit		History		Other Language and Literture		Other Humanities	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Total, 1946–1988 Ph.D.s	48,400	21,000	11,800	6,500	12,500	2,500	8,000	5,800	16,100	6,200
Faculty	90.1	81.9	90.6	80.9	88.3	83.7	92.4	82.0	89.8	82.3
Professor	47.5	24.9	50.6	31.0	53.7	32.0	43.5	19.6	42.5	20.6
Associate Professor	26.0	27.2	23.6	26.8	22.5	22.4	30.6	28.6	28.0	28.3
Assistant Professor	14.9	26.6	13.7	18.0	10.6	28.2	17.2	31.3	17.9	30.6
Instructor	1.7	3.2	2.6	5.1	1.5	1.2	1.1	2.5	1.4	2.7
Lecturer	1.4	3.9	0.2	4.2	1.0	0.6	2.1	5.1	2.3	3.9
Adjunct	2.4	4.2	2.9	4.2	3.7	5.0	1.1	3.1	1.7	4.9
Other Faculty	2.5	4.4	1.9	6.1	3.3	3.2	2.0	4.4	2.5	3.1
Does Not Apply	2.5	3.2	3.1	3.0	2.8	5.0	1.7	2.5	2.4	3.4
Postdoc Appointment	0.6	0.9	1.0	0.0	0.6	2.0	0.3	0.9	0.6	1.3
No Report	0.5	1.4	0.3	1.6	0.4	0.6	0.4	1.9	0.7	1.2
Total, 1983–1988 Ph.D.s	7,400	5,600	1,500	1,400	1,400	600	1,100	1,500	3,500	2,100
Faculty	81.1	75.5	83.7	65.1	71.6	75.9	86.5	81.0	82.1	78.5
Professor	3.5	2.4	0.0	2.9	4.3	0.3	4.2	1.2	4.5	3.4
Associate Professor	12.7	8.6	13.4	6.6	6.5	8.9	9.0	6.5	16.0	11.2
Assistant Professor	61.3	59.2	66.1	46.2	56.8	66.7	71.5	68.4	57.9	59.5
Instructor	3.6	5.3	4.3	9.4	4.0	0.0	1.7	4.8	3.7	4.4
Lecturer	4.8	5.2	0.7	6.9	6.1	2.0	4.9	7.6	6.2	3.3
Adjunct	5.4	7.9	4.5	11.6	10.7	3.8	3.7	3.6	4.1	9.6
Other Faculty	3.3	6.3	2.3	16.4	7.2	3.1	2.3	2.5	2.5	2.9
Does Not Apply	3.7	2.4	6.8	0.0	4.4	10.8	0.9	2.0	2.9	2.1
Postdoc Appointment	1.4	1.9	2.0	0.0	0.0	4.4	0.8	1.6	1.9	2.8
No Report	0.3	0.8	0.0	0.0	0.0	0.0	1.0	1.8	0.4	0.8

Source: National Science Foundation Survey of Graduate Students and Postdoctorates in Science and Engineering

TABLE 5-9

SCIENCE AND ENGINEERING POSTDOCTORAL APPOINTEES IN DOCTORATE-GRANTING INSTITUTIONS BY FIELD, SEX AND CITIZENSHIP, 1982-1990

	Total All Fields	Total S&E	Engin-eering	Sciences Total	Physical Sciences	Environ-mental Sciences	Math Sci	Com-puter Sci	Agri-cultural Sci	Bio-logical Sci	Psy-chology	Social Sci	Total Health Fields
TOTAL													
1982	19,362	14,672	978	13,694	4,281	335	194	46	279	7,756	520	283	4,690
1984	21,535	16,211	1,194	15,017	4,386	488	203	63	358	8,758	422	339	5,324
1986	23,781	17,989	1,398	16,591	4,843	417	201	74	388	9,816	520	332	5,792
1988	26,165	19,866	1,684	18,182	5,187	499	280	91	422	10,885	497	321	6,299
1990	30,432	22,397	1,953	20,444	5,545	611	253	71	499	12,498	487	480	8,035
U.S.CITIZENS													
1982	12,131	8,714	321	8,393	1,914	214	68	34	163	5,359	455	186	3,417
1984	13,586	9,707	435	9,272	1,974	324	103	42	256	5,944	376	253	3,879
1986	14,131	10,150	458	9,692	2,203	276	100	45	225	6,148	470	225	3,981
1988	14,666	10,559	574	9,985	2,256	319	147	52	264	6,266	424	257	4,107
1990	15,754	11,090	609	10,481	2,205	392	99	40	309	6,755	402	279	4,664
FOREIGN CITIZENS													
1982	7,235	5,962	657	5,305	2,367	121	126	12	116	2,397	65	101	1,273
1984	8,001	6,505	760	5,745	2,412	164	100	21	102	2,796	46	104	1,496
1986	9,718	7,824	940	6,884	2,640	141	101	29	163	3,633	50	127	1,894
1988	11,788	9,318	1,102	8,216	2,931	189	133	39	148	4,631	73	72	2,470
1990	14,678	11,307	1,344	9,963	3,340	219	154	31	190	5,743	85	201	3,371
MEN													
1982	14,996	11,431	895	10,536	3,768	286	178	37	246	5,547	302	172	3,565
1984	16,497	12,587	1,111	11,476	3,897	422	175	53	290	6,135	267	237	3,910
1986	17,775	13,598	1,267	12,331	4,209	355	175	64	304	6,716	296	212	4,177
1988	19,339	14,894	1,513	13,381	4,474	414	243	80	330	7,355	281	204	4,445
1990	22,182	16,576	1,743	14,833	4,760	516	223	62	377	8,327	257	311	5,606
WOMEN													
1982	4,366	3,241	83	3,158	513	49	16	9	33	2,209	218	111	1,125
1984	5,038	3,624	83	3,541	489	66	28	10	68	2,623	155	102	1,414
1986	6,006	4,391	131	4,260	634	62	26	10	84	3,100	224	120	1,615
1988	6,826	4,972	171	4,801	713	85	37	11	92	3,530	216	117	1,854
1990	8,250	5,821	210	5,611	785	95	30	9	122	4,171	230	169	2,429
PERCENT FOREIGN CITIZENS													
1982	37.4	40.6	67.2	38.7	55.3	36.1	64.9	26.1	41.6	30.9	12.5	35.7	27.1
1984	37.2	40.1	63.7	38.3	55.0	33.6	49.3	33.3	28.5	31.9	10.9	30.7	28.1
1986	40.9	43.5	67.2	41.5	54.5	33.8	50.2	39.2	42.0	37.0	9.6	38.3	32.7
1988	45.1	46.9	65.4	45.2	56.5	37.9	47.5	42.9	35.1	42.5	14.7	22.4	39.2
1990	48.2	50.5	68.8	48.7	60.2	35.8	60.9	43.7	38.1	46.0	17.5	41.9	42.0
PERCENT WOMEN													
1982	22.5	22.1	8.5	23.1	12.0	14.6	8.2	19.6	11.8	28.5	41.9	39.2	24.0
1984	23.4	22.4	7.0	23.6	11.1	13.5	13.8	15.9	19.0	29.9	36.7	30.1	26.6
1986	25.3	24.4	9.4	25.7	13.1	14.9	12.9	13.5	21.6	31.6	43.1	36.1	27.9
1988	26.1	25.0	10.2	26.4	13.7	17.0	13.2	12.1	21.8	32.4	43.5	36.4	29.4
1990	27.1	26.0	10.8	27.4	14.2	15.5	11.9	12.7	24.4	33.4	47.2	35.2	30.2

TABLE 5-10

FULL-TIME FACULTY WITH TENURE BY TYPE OF INSTITUTION, RANK, SEX, AND CONTROL 1981-82 - 1987-88

Academic year, type, and control of institution	Percent with tenure, by rank							Percent with tenure, by sex	
	All ranks	Professor	Associate professor	Assistant professor	Instructor	Lecturer	No academic rank	Men	Women
1	2	3	4	5	6	7	8	9	10
1980-81									
All institutions	64.8	95.8	82.9	27.9	9.2	11.9	77.4	70.0	49.7
4-year	62.7	95.8	82.2	24.1	6.6	10.7	24.7	68.3	44.0
University	64.5	96.7	83.7	15.3	5.4	4.3	3.5	70.0	41.0
Other 4-year	61.3	94.9	81.2	29.7	7.1	17.8	32.4	67.0	45.5
2-year	74.5	95.6	89.2	58.9	19.8	34.8	81.1	78.8	66.6
Public institutions	68.0	96.8	85.9	32.5	11.8	14.3	79.4	72.8	54.0
4-year	65.7	96.6	85.3	27.6	8.7	12.8	12.2	71.1	47.5
University	66.0	96.9	86.5	16.8	6.1	4.9	4.5	71.3	42.8
Other 4-year	65.5	96.3	84.4	35.5	10.0	21.4	17.2	70.9	50.2
2-year	75.2	95.9	89.5	59.5	20.3	35.8	81.8	79.3	67.5
Private institutions	55.9	93.8	75.2	17.5	3.0	1.5	43.4	62.2	37.2
4-year	56.0	93.8	75.2	17.4	2.8	1.5	37.5	62.2	37.2
University	60.4	96.3	75.8	11.5	3.5	1.8	0.6	66.3	36.5
Other 4-year	53.6	92.0	74.9	20.2	2.6	1.2	43.4	59.8	37.4
2-year	49.5	84.7	77.3	35.2	8.8	0.0	52.2	57.3	39.5
1982-83									
All institutions	65.4	95.6	82.1	26.8	9.0	11.0	77.2	70.4	51.0
4-year	63.2	95.6	81.4	23.1	6.2	9.8	23.6	68.9	45.2
University	65.5	96.8	83.8	14.6	4.9	3.6	0.7	70.9	42.9
Other 4-year	61.6	94.4	79.8	28.4	6.7	16.3	32.7	67.3	46.4
2-year	75.0	95.3	88.9	58.4	19.9	32.3	81.2	78.9	66.2
Public institutions	68.9	96.4	85.5	31.8	11.3	13.3	79.2	73.6	55.7
4-year	66.7	96.5	84.9	27.0	7.9	11.9	11.1	72.0	49.0
University	67.5	97.2	87.0	16.5	5.5	4.3	0.9	72.7	45.0
Other 4-year	66.1	95.7	83.3	34.6	9.0	19.1	19.4	71.4	51.4
2-year	75.7	95.7	89.1	59.0	20.3	32.6	81.7	79.4	69.0
Private institutions	55.9	93.4	73.8	16.3	3.6	1.2	43.3	62.0	38.1
4-year	56.0	93.5	73.8	16.1	3.2	1.2	35.8	62.1	38.0
University	60.3	95.8	74.9	10.3	3.2	1.4	0.0	66.0	37.8
Other 4-year	53.7	91.9	73.2	18.8	3.2	0.9	40.9	59.8	38.1
2-year	49.9	78.9	77.2	35.6	13.7	0.0	56.7	55.8	42.2
1985-86									
All institutions	66.0	95.8	82.2	25.1	10.7	9.3	75.3	71.3	51.7
4-year	64.1	95.8	81.5	21.5	5.7	8.3	20.0	69.9	46.4
University	66.8	97.0	85.0	13.0	5.0	3.2	0.3	72.3	45.4
Other 4-year	62.2	94.8	79.2	26.6	6.0	13.0	27.0	68.1	46.8
2-year	75.1	95.1	88.5	56.4	27.3	28.6	80.4	79.1	68.5
Public institutions	68.9	96.5	85.4	29.1	13.4	10.9	77.2	73.9	55.6
4-year	66.9	96.6	84.9	24.4	7.3	9.7	11.1	72.5	49.3
University	68.1	97.1	87.8	14.0	5.8	3.4	0.3	73.5	46.4
Other 4-year	66.0	96.2	82.7	31.8	8.0	15.0	18.3	71.6	51.1
2-year	75.7	95.2	89.0	57.4	28.0	28.7	80.8	79.5	69.2
Private institutions	57.6	93.8	73.8	16.0	2.7	2.1	40.3	63.9	40.3
4-year	57.7	93.9	73.9	15.9	2.5	2.1	32.1	64.0	40.3
University	63.0	96.7	76.6	10.1	2.2	2.8	0.0	68.4	42.7
Other 4-year	55.1	92.0	72.6	18.3	2.5	1.0	34.6	61.6	39.5
2-year	48.4	89.9	63.6	24.9	9.3	0.0	57.5	56.1	39.3
1987-88									
All institutions	64.9	95.7	81.5	22.2	7.1	8.8	73.2	70.5	50.2
4-year	63.6	95.8	81.0	19.4	4.6	7.8	20.6	69.6	46.1
University	66.3	97.0	84.8	11.1	3.8	3.2	1.1	71.9	45.1
Other 4-year	61.7	94.9	78.4	24.3	4.9	11.7	33.3	67.8	46.6
2-year	73.7	93.4	86.9	53.6	18.4	32.9	79.7	77.7	67.5
Public institutions	67.4	96.2	84.2	25.7	8.8	10.3	75.2	72.7	53.4
4-year	65.9	96.4	83.8	22.0	5.8	9.1	11.7	71.7	48.3
University	67.5	97.2	87.6	12.0	4.3	3.1	0.8	73.2	45.8
Other 4-year	64.6	95.6	80.8	29.0	6.4	13.3	23.1	70.4	49.7
2-year	74.2	93.5	87.3	54.5	18.7	33.1	80.2	78.1	68.3
Private institutions	58.3	94.4	74.8	14.4	2.3	2.6	41.8	64.6	41.6
4-year	58.4	94.5	74.9	14.3	2.1	2.6	35.0	64.6	41.6
University	62.8	96.6	76.8	9.0	1.9	3.3	2.4	68.2	43.2
Other 4-year	56.1	93.0	73.9	16.7	2.2	1.3	43.3	62.5	41.0
2-year	49.3	91.0	63.3	26.9	10.0	0.0	57.3	57.4	40.7

NOTE—Data exclude tenure imputations for nonrespondent institutions. have been revised from previously published figures.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Faculty Salaries, Tenure, and Benefits;* and Integrated Postsecondary Education Data System (IPEDS), "Salaries, Tenure, and Fringe Benefits of Full-Time Instructional Faculty" survey. (This table was prepared March 1990.)

Source: U.S. Equal Employment Opportunity Commission

TABLE 5-11

FULL-TIME ACADEMIC EMPLOYEES BY RACE/ETHNICITY, 1989-90

	Total	Am. Indian		Asian		Black		Hispanic		White	
		No.	%	No.	%	No.	%	No.	%	No.	%
Professional											
Faculty	514,662	1,498	0.3	24,252	4.7	23,225	4.5	10,087	2.0	455,600	88.5
Executive, admin managerial	137,561	491	0.4	1,980	1.4	11,796	8.6	3,183	2.3	120,111	87.3
Other professionals	343,699	1,398	0.4	17,193	5.0	29,045	8.5	9,510	2.8	286,553	83.4
Total Professional	995,922	3,387	0.3	43,425	4.4	64,066	6.4	22,780	2.3	862,264	86.6
Non-professional											
Clerical, secretarial	370,336	1,969	0.5	8,928	2.4	58,966	15.9	18,798	5.1	281,675	76.1
Technical, paraprof.	147,569	735	0.5	6,657	4.5	23,126	15.7	7,484	5.1	109,567	74.2
Skilled crafts	63,728	441	0.7	702	1.1	7,094	11.1	3,410	5.4	52,081	81.7
Service, maintenance	201,973	1,317	0.7	4,348	2.2	67,025	33.2	16,766	8.3	112,517	55.7
	783,606	4,462	0.6	20,635	2.6	156,211	19.9	46,458	5.9	555,840	70.9
Total	1,779,528	7,849	0.4	64,060	3.6	220,277	12.4	69,238	3.9	1,418,104	79.7

Source: U.S. Equal Employment Opportunity Commission

SOURCE: Digest of Education Statistics, 1990 Edition, National Center for Education Statistics, U.S. Department of Education

TABLE 5-12

HISTORICAL SUMMARY OF U.S. FACULTY IN HIGHER EDUCATION BY SEX, 1869-70 TO 1987-88

Year	Total Inst.	Total Faculty	Men	Women	%W
1869-1870	563	5,553	4,887	666	12.0
1879-1880	811	11,522	7,328	4,194	36.4
1889-1890	998	15,809	12,704	3,105	19.6
1899-1900	977	23,868	19,151	4,717	19.8
1909-1910	951	36,480	29,132	7,348	20.1
1919-1920	1,041	48,615	35,807	12,808	26.3
1929-1930	1,409	82,386	60,017	22,369	27.2
1939-1940	1,708	146,929	106,328	40,601	27.6
1949-1950	1,851	246,722	186,189	60,533	24.5
1959-1960	2,008	380,554	296,773	83,781	22.0
1969-1970	2,525	450,000	346,000	104,000	23.1
1979-1980	3,152	675,000	486,000	189,000	28.0
1981-1982	3,253	696,000	496,000	200,000	28.7
1983-1984	3,284	723,000	511,000	212,000	29.3
1987-1988	3,587	793,070	529,413	263,657	33.2

Note: All individuals, not reduced to full-time equivalents. For 1969-1970, includes only instructional staff at instructor level or above.

Source: The American College Teacher, 1989–90, Higher Education Reserach Institute, University of California, Los Angeles

TABLE 5-13

CHARACTERISTICS OF AMERICAN COLLEGE AND UNIVERSITY TEACHERS BY SEX, 1990

Characteristic	All Inst M&W	Men		Women		Men–Women	
		4–year	2–year	4–year	2–year	4–year	2–year
Age as of December 31, 1989							
less than 30	2.2	1.4	1.3	4.8	2.5	−3.4	−1.2
30–34	8.0	7.9	4.8	11.6	6.0	−3.7	−1.2
35–39	13.4	12.4	9.6	17.8	15.6	−5.4	−6.0
40–44	17.3	15.9	17.8	19.6	20.5	−3.7	−2.7
45–49	18.9	18.5	22.3	17.0	20.7	1.5	1.6
50–54	15.7	16.1	19.1	12.1	16.7	4.0	2.4
55–59	12.8	14.3	14.5	9.0	9.3	5.3	5.2
60–64	8.3	9.6	7.6	5.9	6.4	3.7	1.2
65–69	2.9	3.5	2.4	1.8	1.9	1.7	0.5
70 or more	0.5	0.5	0.6	0.4	0.4	0.1	0.2
Academic Rank							
Professor	33.7	43.2	29.8	15.8	17.9	27.4	11.9
Associate Professor	25.7	29.1	16.8	26.9	14.7	2.2	2.1
Assistant Professor	23.3	22.3	11.8	38.5	13.5	−16.2	−1.7
Lecturer	1.8	1.3	0.4	4.4	0.7	−3.1	−0.3
Instructor	13.1	3.1	35.8	11.5	48.3	−8.4	−12.5
Other	2.3	1.0	5.5	2.9	5.0	−1.9	0.5
Principal Activity							
Administration	3.3	3.4	3.0	3.2	2.9	0.2	0.1
Teaching	89.9	87.4	95.4	90.9	95.1	−3.5	0.3
Research	5.7	8.4	0.1	4.4	0.0	4.0	0.1
Services to Clients and Patients	0.6	0.4	0.7	0.7	1.4	−0.3	−0.7
Other	0.5	0.4	0.8	0.8	0.5	−0.4	0.3
Racial Background*							
White/Caucasian	90.4	90.7	92.6	88.7	89.1	2.0	3.5
Black/Negro/Afro–American	4.0	2.9	2.6	6.9	6.2	−4.0	−3.6
American Indian	0.9	0.7	1.5	1.1	0.8	−0.4	0.7
Asian–American	3.2	3.8	2.0	2.3	2.5	1.5	−0.5
Mexican–American/Chicano	0.8	0.5	1.7	0.6	1.6	−0.1	0.1
Puerto Rican–American	0.4	0.4	0.0	0.7	0.5	−0.3	−0.5
Other	2.1	2.4	2.0	1.9	1.3	0.5	0.7
Highest Degree Earned							
Bachelor's	3.2	1.0	9.3	1.9	10.8	−0.9	−1.5
Master's	28.1	14.5	57.5	31.6	65.7	−17.1	−8.2
LL.B., J.D.	0.7	0.7	0.8	0.5	0.9	0.2	−0.1
M.D., D.D.S or equivalent	0.4	0.4	0.5	0.4	0.3	0.0	0.2
Other First Professional	0.6	0.7	0.5	0.7	0.2	0.0	0.3
Ed. D.	4.7	4.5	3.7	6.6	3.3	−2.1	0.4
Ph.D.	56.3	73.8	16.1	52.9	7.9	20.9	8.2
Other Degree	4.0	3.5	6.0	3.5	5.9	0.0	0.1
None	2.0	0.9	5.7	1.8	4.9	−0.9	0.8
Field of Highest Degree							
Agriculture or Forestry	1.4	1.9	1.8	0.5	0.2	1.4	1.6
Biological Sciences	6.1	7.1	6.3	4.2	3.6	2.9	2.7
Business	6.4	6.7	8.3	4.8	6.0	1.9	2.3
Education	15.0	10.0	17.7	21.4	29.7	−11.4	−12.0
Engineering	5.1	7.3	5.1	0.9	0.3	6.4	4.8
English	6.8	5.5	7.4	8.5	10.2	−3.0	−2.8
Health Related	4.8	1.6	2.1	10.0	17.8	−8.4	−15.7
History or Political Science	6.5	8.3	5.3	3.8	2.2	4.5	3.1
Humanities	8.2	8.9	3.8	10.9	3.5	−2.0	0.3
Fine Arts	8.3	8.7	8.1	8.6	5.5	0.1	2.6
Mathematics or Statistics	5.6	6.2	7.4	3.2	4.7	3.0	2.7
Physical Sciences	6.8	9.0	7.5	2.3	1.3	6.7	6.2
Social Sciences	12.5	14.0	8.5	13.1	7.5	0.9	1.0
Other Technical	1.5	1.3	3.3	0.7	1.8	0.6	1.5
Other Non–technical	5.0	3.5	7.4	7.2	5.7	−3.7	1.7

* Percentages will sum to more than 100 if any respondents checked more than one category.

TABLE 5-13 (continued)

Characteristic	All Inst M&W	Men		Women		Men–Women	
		4–year	2–year	4–year	2–year	4–year	2–year
Year Highest Degree Earned							
1951 or earlier	2.6	2.5	3.8	1.9	3.5	0.6	0.3
1952 – 1956	3.2	4.2	2.6	1.5	1.3	2.7	1.3
1957 – 1961	5.7	7.2	5.3	2.6	3.5	4.6	1.8
1962 – 1966	11.3	13.4	13.9	5.7	6.8	7.7	7.1
1976 – 1971	17.8	19.7	22.9	10.9	13.1	8.8	9.8
1972 – 1976	18.0	17.7	21.2	16.6	18.6	1.1	2.6
1977 – 1981	15.6	13.5	14.2	20.2	21.1	−6.7	−6.9
1982 – 1986	16.5	14.6	10.5	23.8	21.9	−9.2	−11.4
1987 – 1989	9.2	7.2	5.8	16.8	10.3	−9.6	−4.5
Department of Current Faculty Appointment							
Agriculture or Forestry	1.6	2.2	1.3	0.7	0.2	1.5	1.1
Biological Sciences	5.6	6.5	5.9	3.7	3.3	2.8	2.6
Business	8.6	8.6	9.9	7.0	10.7	1.6	−0.8
Education	8.5	7.0	4.6	14.5	11.1	−7.5	−6.5
Engineering	4.9	7.2	4.0	0.9	0.2	6.3	3.8
English	7.4	5.7	8.7	9.4	12.1	−3.7	−3.4
Health Related	5.9	1.8	2.6	12.5	23.6	−10.7	−21.0
History of Political Science	5.7	7.6	3.7	3.3	1.3	4.3	2.4
Humanities	8.0	8.7	4.1	10.7	2.9	−2.0	1.2
Fine Arts	8.6	9.2	7.9	9.2	4.3	0.0	3.6
Mathematics or Statistics	6.1	6.1	8.4	4.6	6.4	1.5	2.0
Physical Sciences	6.7	8.8	7.8	2.2	1.8	6.6	6.0
Social Sciences	12.1	13.2	10.0	11.9	8.1	1.3	1.9
Other Technical	3.7	2.6	10.6	1.4	5.4	1.2	5.2
Other Non–technical	6.5	4.8	10.5	8.2	8.5	−3.4	2.0
Year Appointed to Current Position							
1951 or earlier	1.9	2.0	1.7	1.8	1.8	0.2	−0.1
1952 – 1956	1.2	1.7	0.4	0.5	0.2	1.2	0.2
1957 – 1961	3.3	4.6	10.0	1.6	0.6	3.0	9.4
1962 – 1966	9.8	12.3	2.0	5.1	3.9	7.2	−1.9
1976 – 1971	18.8	19.9	27.7	10.9	16.1	9.0	11.6
1972 – 1976	13.7	12.3	17.8	11.9	20.1	0.4	−2.3
1977 – 1981	14.0	13.1	14.4	14.4	18.2	−1.3	−3.8
1982 – 1986	18.7	17.7	14.2	24.0	20.5	−6.3	−6.3
1987 – 1989	18.6	16.4	12.1	29.7	18.6	−13.3	−6.5
Tenured?							
Yes	66.8	71.8	75.5	48.3	63.3	23.5	12.2
No	33.2	28.2	24.5	51.7	36.7	−23.5	−12.2
Year Received Tenure							
1951 or earlier	0.4	0.4	0.4	0.2	1.4	0.2	−1.0
1952 – 1956	0.4	0.5	0.2	0.2	0.0	0.3	0.2
1957 – 1961	1.8	2.4	0.4	0.9	0.3	1.5	0.1
1962 – 1966	5.8	7.5	3.9	2.8	0.7	4.7	3.2
1976 – 1971	17.7	19.3	20.9	10.6	11.3	8.7	9.6
1972 – 1976	24.8	24.5	29.4	21.1	24.8	3.4	4.6
1977 – 1981	18.6	17.6	18.5	21.5	22.2	−3.9	−3.7
1982 – 1986	18.7	17.0	15.6	25.5	26.0	−8.5	−10.4
1987 – 1989	11.8	10.8	10.6	17.1	13.3	−6.3	−2.7
Marital Status							
Married (currently)	75.9	82.0	82.6	57.6	66.5	24.4	16.1
Separated	1.3	1.4	1.3	1.4	0.9	0.0	0.4
Single (never married)	10.9	8.0	6.2	21.8	12.9	−13.8	−6.7
Single (with partner)	2.4	1.7	1.5	4.5	2.9	−2.8	−1.4
Single (divorced)	8.3	6.2	7.7	12.3	13.9	−6.1	−6.2
Single (widowed)	1.2	0.6	0.8	2.5	3.0	−1.9	−2.2

TABLE 5-13 (continued)

Characteristic	All Inst M&W	Men 4-year	Men 2-year	Women 4-year	Women 2-year	Men–Women 4-year	Men–Women 2-year
Father's Education							
8th grade or less	19.9	20.3	25.7	14.6	20.5	5.7	5.2
some high school	11.0	10.6	15.1	8.8	12.1	1.8	3.0
completed high school	22.6	21.8	25.9	21.8	25.1	0.0	0.8
some college	13.7	13.3	11.6	15.0	16.7	−1.7	−5.1
graduated from college	12.9	13.4	9.5	14.6	11.4	−1.2	−1.9
attended grad/prof school	4.9	5.1	3.2	6.3	3.6	−1.2	−0.4
attained advanced degree	15.0	15.6	9.0	18.9	10.5	−3.3	−1.5
Mother's Education							
8th grade or less	14.4	15.3	17.7	9.6	13.7	5.7	4.0
some high school	11.0	10.6	13.5	9.8	12.6	0.8	0.9
completed high school	33.3	33.2	37.2	30.7	34.5	2.5	2.7
some college	16.4	15.8	14.9	18.2	18.1	−2.4	−3.2
graduated from college	14.7	15.0	10.7	17.2	13.0	−2.2	−2.3
attended grad/prof school	4.0	3.7	2.4	5.6	4.5	−1.9	−2.1
attained advanced degree	6.3	6.3	3.6	9.0	3.7	−2.7	−0.1
Hours/Week Spent on Scheduled Teaching							
None	0.3	0.4	0.3	0.2	0.2	0.2	0.1
1 – 4	7.2	9.1	1.4	7.2	3.6	1.9	−2.2
5 – 8	26.2	33.4	4.3	28.2	6.1	5.2	−1.8
9 – 12	32.0	36.6	14.6	37.6	15.4	−1.0	−0.8
13 – 16	17.6	12.6	33.2	16.0	30.5	−3.4	2.7
17 – 20	10.1	5.3	25.1	6.7	26.5	−1.4	−1.4
21 – 34	5.9	2.2	19.4	3.5	15.8	−1.3	3.6
35 – 44	0.5	0.2	1.4	0.4	1.5	−0.2	−0.1
44 or more	0.1	0.1	0.3	0.1	0.4	0.0	−0.1
Number of Days Spent Off–Campus for Professional Activities							
None	12.4	10.7	19.1	11.6	15.2	−0.9	3.9
1 – 2	14.3	11.5	23.3	13.0	22.0	−1.5	1.3
3 – 4	23.7	21.3	27.4	24.4	31.9	−3.1	−4.5
5 – 10	29.8	31.7	21.4	32.4	24.0	−0.7	−2.6
11 – 20	13.3	16.1	6.2	13.2	5.5	2.9	0.7
21 – 50	5.0	6.7	1.7	4.1	1.1	2.6	0.6
50+	1.6	2.0	0.8	1.3	0.3	0.7	0.5
Professional Writings Accepted or Published in Last Two Years							
None	45.3	31.8	80.0	43.5	85.2	−11.7	−5.2
1 – 2	25.7	28.7	15.2	30.1	11.8	−1.4	3.4
3 – 4	15.8	20.7	3.4	16.0	1.8	4.7	1.6
5 – 10	10.8	15.1	0.9	9.3	0.9	5.8	0.0
11 – 20	1.9	2.9	0.3	0.8	0.2	2.1	0.1
21 – 50	0.4	0.7	0.0	0.2	0.1	0.5	−0.1
50+	0.1	0.1	0.1	0.1	0.1	0.0	0.0
Number of BA or BS Undergraduate Credit Courses Taught – Other than in General Ed.							
none	11.2	6.4	26.1	8.2	33.0	−1.8	−6.9
one	28.9	34.9	10.5	28.5	13.2	6.4	−2.7
two	27.3	30.4	15.2	29.5	17.0	0.9	−1.8
three	17.6	17.8	16.5	19.3	13.1	−1.5	3.4
four	9.3	7.4	15.4	10.5	11.0	−3.1	4.4
five or more	5.6	3.1	16.2	4.0	12.7	−0.9	3.5
Number of Graduate Courses Taught							
none	64.1	53.7	98.2	64.6	99.4	−10.9	−1.2
one	29.6	38.8	1.0	27.7	0.4	11.1	0.6
two	5.0	6.0	0.3	6.1	0.2	−0.1	0.1
three	1.0	1.1	0.1	1.3	0.0	−0.2	0.1
four	0.2	0.3	0.1	0.1	0.0	0.2	0.1
five or more	0.2	0.1	0.3	0.2	0.0	−0.1	0.3

Source: Profiles of Faculty in Higher Education Insaitutions, 1988, National Center for Education Statistics

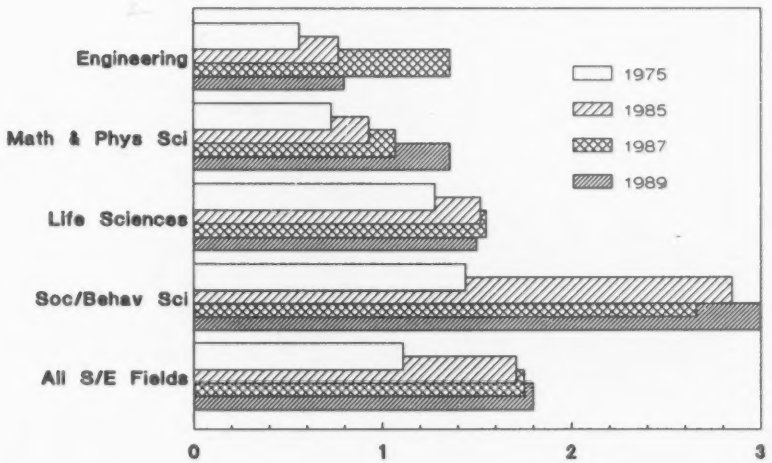
TABLE 5-14

PERCENTAGE DISTRIBUTION OF FULL-TIME REGULAR FACULTY IN FOUR-YEAR INSTITUTIONS, BY SEX AND RACE/ETHNICITY, FALL, 1987

	Sex		Race/Ethnicity				
Program Area	Men	Women	American Indian	Asian	Black	Hispanic	White
All Areas	75	25	1	5	3	2	89
Agri/Home Ec.	63	37	2	1	<1	3	94
Business	78	22	1	9	3	1	86
Education	62	38	1	1	7	3	88
Engineering	97	3	0	15	1	1	83
Fine Arts	76	24	1	2	3	3	91
Health Sciences	68	32	1	7	3	1	88
Humanities	70	30	1	2	3	4	91
Natural Sciences	85	15	1	7	1	2	89
Social Sciences	77	23	1	2	5	2	89
Other Fields	77	23	1	4	6	1	88

CHART 5-2

PERCENT BLACKS ON PhD FACULTY IN S/E FIELDS, 1975, '85, '87 & '89



Source: NSF

Graph by CPST (35-PWM5)

Source: Investing in Human Potential: Science and Engineering at the Crossroads, American Association for the Advancement of Science, 1991

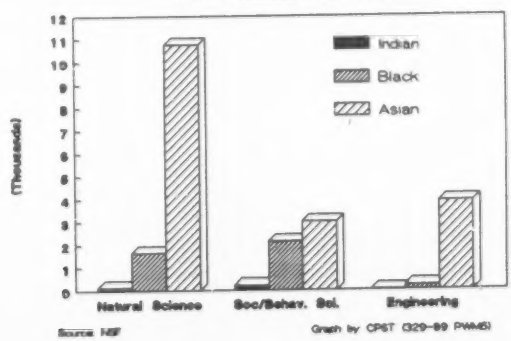
TABLE 5-15

WOMEN, MINORITY AND DISABLED PERSONS AS A PERCENTAGE OF FACULTY, BY INSTITUTION TYPE AND FACULTY POSITION, 1991

Faculty Position	All Institutions	Research University	Doctorate Granting	Compre-hensive	Liberal Arts	Prof. and Other
Women						
Total Full-Time	27.7	19.7	22.0	30.8	40.3	27.0
Full-Time S/E						
Tenured	12.1	5.7	5.8	14.4	23.4	20.1
Tenure Track	21.1	15.6	16.9	23.8	28.3	25.9
Non-Tenure	32.7	27.8	26.8	38.3	45.6	19.9
Part-Time S/E	28.0	20.3	23.4	32.4	37.3	16.6
Blacks						
Total Full-Time	2.5	1.9	1.6	3.6	5.2	1.2
Full-Time S/E						
Tenured	1.2	0.6	0.3	2.2	2.0	0.5
Tenure Track	2.2	2.9	3.2	3.9	4.7	0.7
Non-Tenure	3.4	2.5	1.6	2.4	12.5	1.4
Part-Time S/E	2.0	1.1	1.8	1.9	3.3	5.0
Hispanics						
Total Full-Time	1.8	1.3	1.7	2.8	0.9	0.9
Full-Time S/E						
Tenured	1.1	0.8	0.8	1.8	0.0	2.4
Tenure Track	2.0	1.2	2.2	1.8	0.0	1.8
Non-Tenure	1.4	2.1	3.0	2.0	0.9	0.0
Part-Time S/E	1.2	1.0	1.7	1.8	0.0	0.0
American Indians						
Total Full-Time	0.3	0.2	0.3	0.3	0.3	0.3
Full-Time S/E						
Tenured	0.9	0.3	0.2	0.2	0.1	0.0
Tenure Track	0.4	0.1	0.4	0.6	0.4	0.0
Non-Tenure	0.3	0.1	0.4	0.3	0.4	0.1
Part-Time S/E	0.2	0.1	0.2	0.0	0.6	0.0
Physicaly Disabled Persons						
Total Full-Time	0.9	9.2	1.0	1.1	0.6	0.9
Full-Time S/E						
Tenured	1.1	1.4	1.1	0.9	1.4	0.7
Tenure Track	0.4	0.5	0.4	0.2	0.6	0.0
Non-Tenure	0.3	0.3	0.8	0.2	0.0	0.0
Part-Time S/E	1.2	0.4	1.5	1.0	2.5	0.4

CHART 5-3

MINORITY PhD FACULTY IN SCIENCE AND ENGINEERING, 1989



SOURCE: 1980 Fact Book for Academic Administrators, American Council in Education and Digest of Education Statistics, 1981, National Center for Education Statistics and Profile of Women College Presidents, Women's College Coalition and American Council on Education, Office of Women in Higher Education, December 1984, September 1985, 1990 & 1992.

TABLE 5-16

WOMEN COLLEGE PRESIDENTS BY TYPE AND CONTROL OF INSTITUTION, 1975 – 1991

YEAR	All Institutions		Public Institutions		Private Institutions		Women's Colleges@		Members of Religious Orders
	No.	%+	No.	%+	No.	%+	No.	%+	No.
Four–Year and Two–Year Institutions									
1975	148	4.8	16	1.1	132	8.2			105
1976	154	5.0	16	1.1	138	8.6	71	56.8	
1977	156	5.0	19	1.3	137	8.3	87	71.3	
1978	177	5.6	31	2.1	146	8.7	75	64.1	
1980	209	6.9	62	4.2	157	9.4	78	67.8	
1981	231	7.2	72	4.8	159	9.2	80	70.2	98
1982	244	7.5	78	5.0	166	9.5	84	73.7	99
1983	254	7.8	85	5.7	169	9.6	85	74.6	97
1984	286	8.8	104	6.9	182	10.4	83	74.8	93
1987	296	8.7	112	7.5	184	10.1			86
1989	328	9.3	146	9.4	182	9.3			77
1991*	360								
Four–Year Institutions									
1975	103	5.4	5	0.9	98	7.2			79
1976	110	5.7	3	0.5	107	7.8	57	58.8	
1977	112	5.7	5	0.9	107	7.7	72	75.0	
1978	123	6.3	9	1.6	114	8.1	62	66.7	
1980	145	7.4	21	3.8	124	8.8	60	67.4	
1981	162	8.3	25	4.5	135	9.5	61	68.5	86
1982	152	8.1	25	4.5	127	8.9	62	69.7	73
1983	152	7.7	28	5.0	124	8.7			
1984	166	8.4	32	5.7	134	9.4			
1987	195	9.4	39	2.6	156	8.5			
1989	195	9.2	44	7.4	151	9.9			
1991*	212								
Two–Year Institutions									
1975	45	3.9	11	1.2	34	14.2			26
1976	44	3.8	13	1.4	31	13.0	14	50.0	
1977	44	3.7	14	1.5	30	12.0	15	57.7	
1978	54	4.5	22	2.4	32	11.3	13	54.2	
1980	64	5.4	41	4.4	33	12.3	18	18.3	
1981	69	5.4	47	4.9	24	7.1	19	19.4	12
1982	92	7.2	53	5.6	39	11.6	22	22.4	26
1983	102	8.0	57	6.1	45	13.4			
1984	120	9.4	72	7.7	48	14.4			
1987	101	7.6	73	4.8	28	1.5			
1989	133	9.3	102	10.6	31	7.2			
1991	148	12.0							

Minority Women College Presidents

Year	Blacks	Hispanics	Am Indian	Asian	Total
1984					26
1987	22	13	4	1	40
1989	20	16	5	2	43

Notes: Blanks indicate no information available in source. @ Institutions with enrollment of at least 90% women.
+ Institutions headed by women as a percentage of all institutions of the type indicated. Annual directories published by NCES are the source of data on the number of institutions. * As of July 1991

SOURCE: *Digest of Education Statistics, 1990* National Center for Education Statistics

TABLE 5-17

PRINCIPALS IN PUBLIC AND PRIVATE ELEMENTARY AND SECONDARY SCHOOLS, SELECTED CHARACTERISTICS: 1987-88

Selected characteristics	Total [1]	Percent of principals, by highest degree earned [2]				Average years of experience				Average annual salary of principals, by length of work		
		Bachelor's	Master's	Education specialist	Doctor's	As a principal	Other school position	As a teacher	Outside school position	10 months or less	11 months	12 months
1	2	3	4	5	6	7	8	9	10	11	12	13
Public schools												
Total	77,890	2.4	53.4	35.1	8.9	10.0	3.8	9.8	1.0	$38,726	$41,563	$44,252
Men	58,585	1.9	55.7	34.3	8.2	11.2	3.6	9.0	1.1	39,143	41,488	44,509
Women	19,118	3.9	46.6	37.8	11.3	6.1	4.0	12.3	1.0	37,643	41,562	43,241
Race/ethnicity												
White [3]	69,048	2.5	53.7	35.0	8.8	10.1	3.8	9.8	1.0	38,136	41,397	44,319
Black [3]	6,696	—	51.4	36.9	11.5	8.8	4.8	11.8	1.2	42,796	42,843	43,319
Hispanic [4]	2,483	—	54.2	30.2	(#)	6.6	5.4	9.8	1.3	40,394	42,235	46,770
Asian or Pacific Islander [3]	434	—	52.8	33.4	(#)	7.7	4.5	10.8	0.4	41,581	(#)	(#)
American Indian or Alaskan Native [3]	821	—	51.2	—	(#)	9.9	4.6	9.1	1.3	(#)	(#)	43,706
Age												
Under 40	14,430	3.6	54.7	33.7	(#)	4.3	2.5	7.8	0.7	34,901	37,885	39,359
40 to 44	17,755	2.0	49.0	39.7	9.2	6.8	3.7	9.2	1.0	37,872	40,225	43,351
45 to 49	16,406	0.0	52.8	35.8	9.6	10.0	4.0	10.3	0.9	39,004	42,318	45,249
50 to 54	14,936	2.2	56.6	33.2	7.9	13.2	4.3	10.6	1.3	40,377	43,454	45,884
55 or over	13,891	2.7	55.9	31.7	9.6	16.5	4.1	11.4	1.4	42,272	44,080	46,999
Private schools												
Total	25,401	25.7	51.0	12.2	4.2	8.0	2.6	9.8	2.4	13,182	23,505	22,651
Men	12,131	26.3	49.6	9.8	9.1	8.1	2.8	6.8	3.3	13,963	32,553	25,752
Women	13,243	25.2	52.3	14.4	3.8	7.8	2.5	12.5	1.5	12,784	18,863	18,893
Race/ethnicity												
White [3]	24,056	25.9	51.0	12.3	6.1	8.0	2.6	9.8	2.3	12,853	23,582	22,748
Black [3]	771	(#)	5.6	(#)	(#)	6.8	4.1	10.2	2.6	(#)	(#)	21,895
Hispanic [4]	629	(#)	(#)	(#)	(#)	8.0	3.5	11.1	2.2	(#)	(#)	23,101
Age												
Under 40	7,606	34.6	46.1	7.5	3.5	4.2	1.5	5.5	1.8	15,658	23,390	20,024
40 to 44	5,352	21.4	56.5	13.9	6.0	6.4	2.5	9.5	1.9	13,965	22,022	24,960
45 to 49	4,497	25.4	48.2	14.8	8.2	8.1	2.9	10.5	2.7	12,466	23,971	25,287
50 to 54	2,979	22.2	55.5	11.2	6.9	10.7	2.8	12.3	2.2	11,944	23,171	23,443
55 or over	4,703	18.3	54.0	15.4	9.2	14.1	4.3	14.4	3.7	10,485	25,565	22,197

[1] Total differs from data appearing in other tables because of varying survey processing procedures and time period coverages.
[2] Percentages for those with less than a bachelor's degree are not shown.
[3] Includes persons of Hispanic origin.
[4] Persons of Hispanic origin may be of any race.
[#] Too few sample cases (fewer than 30) for a reliable estimate.
— Data not available or not applicable.

NOTE.—Details may not add to 100 percent because of rounding and survey item nonresponse.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Schools and Staffing Survey, 1987-88." (This table was prepared May 1990.)

Source: Administrators [1] in ***How Schools Shortchange Girls,*** AAUW, 1992

SEX OF SCHOOL SUPERINTENDENTS AND PRINCIPALS – AND RACE/ETHNICITY OF WOMEN, 1990

	Principals	Superintendents
Men	72.3%	95.2%
Women	27.7	4.8
Am Indian	0.1	0.0
Asian	0.4	0.1
Hispanic	1.4	0.1
Black	4.3	0.2
White	21.5	4.4

Source: Science and Mathematics Indicators Project, Council of Chief State School Officers, January 1992

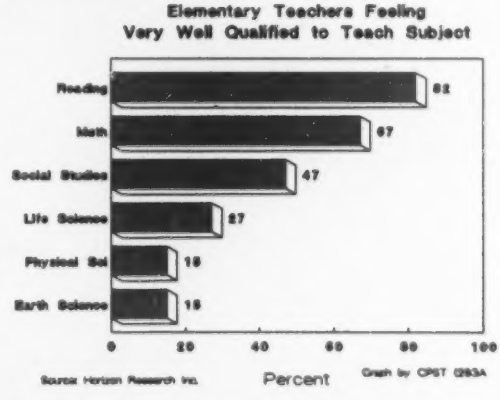
TABLE 5-18

MINORITY TEACHERS IN MATHEMATICS AND SCIENCE BY MINORITY STUDENTS IN STATE

STATE	Percent Minority Students (K-12)	Percent Minority Teachers (9-12)			
		Math	Biology	Chemistry	All High Schools
MAINE	2 %	.2 %	0 %	0 %	.3 %
IOWA	6	.4	0	1	1
IDAHO	7 *	2	1	0	2
MONTANA	7 *	1	1	0	2
UTAH	7	2	2	1	3
NORTH DAKOTA	8	.2	1	1	2
KENTUCKY	10	2	3	1	4
INDIANA	14	3	3	2	4
KANSAS	15	3	2	3	4
RHODE ISLAND	16	2	2	5	6
WISCONSIN	14	2	2	1	2
OHIO	16	3	5	2	6
PENNSYLVANIA	17	3	3	1	3
MICHIGAN	22	7	3	1	8
NEVADA	24	9	7	3	10
COLORADO	24	5	6	–	7
CONNECTICUT	24	3	3	2	5
ARKANSAS	25	10	10	6	10
OKLAHOMA	25	5	5	4	6
VIRGINIA	27 *	13	14	10	15
DELAWARE	31	8	4	0	11
NORTH CAROLINA	33	14	16	11	16
NEW JERSEY	34	10	7	5	10
ARIZONA	36	6	5	–	10
ILLINOIS	34	11	12	7	12
ALABAMA	37	18	19	17	21
MARYLAND	38	17	16	–	–
SOUTH CAROLINA	42	22	21	17	20
TEXAS	50	18	17	11	19
MISSISSIPPI	51	26	30	27	31
CALIFORNIA	53	18	16	12	18
NEW MEXICO	58	20	19	19	25
HAWAII	77	71	61	67	78
U.S. TOTAL	32 %	11 %	10 %	7 %	11 %

Percent minority teachers = sum of four non-white categories of public school teachers.
Minority teachers reported under Biology for Colorado, Arizona, Maryland = All science fields.
Sources: (teachers) State Departments of Education, Fall 1989; (students) NCES Common Core of Data, Public School Universe, Fall 1989; (*) USDE Office for Civil Rights, State Summaries of Projected Data. 1986.
Council of Chief State School Officers, State Education Assessment Center, Washington, DC, 1990

CHART 5-4



SOURCE: Series of Earned Degrees Conferred, National Center for Education Statistics

TABLE 6-1

PhD DEGREES IN THE PHYSICAL SCIENCES BY SEX AND SUBFIELD, 1950 - 1990

	Total			Physical Sciences Fields															
				Physics				Chemistry				Geology				Other			
Year	No.	Wom	%W	No.	%T	Wom	%W	No.	%T	Wom	%W	No.	%T	Wom	%W	No.	%T	Wom	%W
1950	1498	49	3	358	24	5	1	953	64	39	4	113	8	3	3	74	5	2	3
1951	1681	64	4	443	26	8	2	1046	62	52	5	123	7	3	2	69	4	1	1
1952	1720	57	3	485	28	9	2	1031	60	45	4	116	7	0	0	88	5	3	3
1953	1714	62	4	478	28	6	1	999	58	51	5	133	8	3	2	104	6	2	2
1954	1686	61	4	485	29	6	1	1013	60	45	4	136	8	6	4	52	3	4	8
1955	1713	52	3	511	30	12	2	1005	59	36	4	154	9	2	1	43	3	2	5
1956	1667	68	4	470	28	8	2	986	59	52	5	135	8	1	1	76	5	7	9
1957	1674	71	4	453	27	14	3	1003	60	48	5	141	8	3	2	77	5	6	8
1958	1655	66	4	464	28	9	2	939	57	49	5	151	9	3	2	101	6	5	5
1959	1812	69	4	482	27	9	2	1009	56	49	5	198	11	5	3	123	7	6	5
1960	1838	62	3	487	26	10	2	1048	57	48	5	201	11	4	2	102	6	0	0
1961	1991	70	4	564	28	6	1	1131	57	57	5	202	10	3	1	94	5	4	4
1962	2122	87	4	667	31	12	2	1139	54	69	6	199	9	3	2	117	6	3	3
1963	2380	95	4	752	32	10	1	1254	53	78	6	265	11	5	2	109	5	2	2
1964	2455	113	5	778	32	11	1	1301	53	93	7	237	10	5	2	139	6	4	3
1965	2829	127	4	942	33	20	2	1414	50	101	7	274	10	1	0	199	7	5	3
1966	3045	131	4	973	32	21	2	1571	52	94	6	290	10	10	3	211	7	6	3
1967	3462	162	5	1183	34	30	3	1744	50	118	7	285	8	5	2	250	7	9	4
1968	3593	188	5	1260	35	26	2	1757	49	142	8	280	8	6	2	296	8	14	5
1969	3859	206	5	1296	34	32	2	1941	50	145	7	314	8	18	6	308	8	11	4
1970	4313	236	5	1439	33	37	3	2208	51	169	8	283	7	9	3	383	9	21	5
1971	4391	246	6	1482	34	43	3	2160	49	173	8	324	7	11	3	425	10	19	4
1972	4103	273	7	1344	33	43	3	1971	48	193	10	310	8	16	5	478	12	21	4
1973	4016	274	7	1338	33	51	4	1882	47	184	10	305	8	12	4	491	12	27	5
1974	3631	253	7	1115	31	47	4	1828	50	173	9	315	9	10	3	373	10	23	6
1975	3628	302	8	1080	30	52	5	1824	50	205	11	292	8	13	4	432	12	32	7
1976	3433	300	9	997	29	45	5	1623	47	197	12	313	9	23	7	500	15	35	7
1977	3344	320	10	945	28	55	6	1571	47	188	12	325	10	23	7	503	15	54	11
1978	3137	312	10	873	28	49	6	1525	49	203	13	268	9	26	10	471	15	34	7
1979	3104	350	11	918	30	66	7	1518	49	230	15	286	9	27	9	382	12	27	7
1980	3095	386	12	830	27	63	8	1551	50	260	17	313	10	26	8	401	13	37	9
1981	3141	376	12	866	28	61	7	1622	52	251	15	284	9	30	11	369	12	34	9
1982	3286	451	14	873	27	66	8	1722	52	281	16	282	9	50	18	409	12	54	13
1983	3269	458	14	858	26	61	7	1746	53	295	17	293	9	48	16	372	11	54	15
1984	3298	489	15	953	29	76	8	1744	53	319	18	315	10	49	16	286	9	45	16
1985	3390	552	16	951	28	84	9	1789	53	351	20	289	9	55	19	361	11	62	17
1986	3551	588	17	1010	28	91	9	1908	54	400	21	215	6	56	26	418	12	41	10
1987	3671	634	17	1086	30	103	9	1976	54	421	21	280	8	57	20	329	9	53	16
1988	3792	682	18	1093	29	111	10	1990	52	442	22	350	9	63	18	359	9	66	18
1989	3847	758	20	1111	29	102	9	2034	53	516	25	271	7	54	20	431	11	86	20
1990	4259	804	19	1115	26	115	10	2183	51	536	25	289	7	44	15	672	16	109	16
50-59	16,820	619	4	4,629	28	86	2	9,984	59	466	5	1,400	8	29	2	807	5	38	5
60-69	27,574	1,241	5	8,902	32	178	2	14,300	52	945	7	2,547	9	60	2	1825	7	58	3
70-79	37,100	2,866	8	11,531	31	488	4	18,110	49	1,915	11	3,021	8	170	6	4438	12	293	7
80-89	34,340	5,374	16	9,631	28	818	8	18,082	53	3,536	20	2,892	8	488	17	3,735	11	532	14
TOTAL	120,093	10,904	9	35,606	30	1,685	5	62,659	52	7,398	12	10,149	8	791	8	11,477	10	1,030	9

SOURCE: Series of Earned Degrees Conferred, National Center for Education Statistics, redefined by NSF

TABLE 6-2

MASTERS DEGREES IN THE PHYSICAL SCIENCES BY SUBFIELD AND SEX, 1950 – 1990

Year	Total Phys Sci			Physical Sciences Fields															
				Physics				Chemistry				Astronomy				Other			
	No.	Wom	%W	No.	%PS	Wom	%W	No.	%PS	Wom	%W	No.	%PS	Wom	%W	No.	%PS	Wom	%W
1950				922		34	3.7	1576		208	13								
1951				973		39	4.0	1462		162	11								
1952				886		35	4.0	1409		167	12								
1953				721		35	4.9	1211		116	10								
1954				714		29	4.1	1098		126	11								
1955				729		28	3.8	1173		137	12								
1956				742		23	3.1	1164		129	11								
1957				825		28	3.4	1047		134	13								
1958				795		25	3.1	1125		167	15								
1959				915		30	3.3	1145		164	14								
1960				1073		35	3.3	1228		203	17								
1961				1271		50	3.9	1313		200	15								
1962				1425		62	4.4	1425		246	17								
1963				1567		76	4.9	1463		259	18								
1964				1848		66	3.6	1586		280	18								
1965				1906		80	4.2	1715		328	19								
1966	4233	483	11	1949	46	80	4.1	1839	43	355	19	59	1.4	9	15	386	9.1	39	10
1967	4441	498	11	2111	48	96	4.5	1831	41	347	19	69	1.6	11	16	430	9.7	44	10
1968	4500	564	13	2088	46	95	4.5	2014	45	418	21	80	1.8	12	15	318	7.1	39	12
1969	4787	579	12	2259	47	120	5.3	2070	43	381	18	107	2.2	7	7	351	7.3	71	20
1970	4824	722	15	2205	46	158	7.2	2146	44	480	22	92	1.9	9	10	381	7.9	75	20
1971	5159	737	14	2194	43	152	6.9	2284	44	492	22	108	2.1	14	13	573	11.1	79	14
1972	4899	736	15	2035	42	159	7.8	2259	46	505	22	167	3.4	12	7	438	8.9	60	14
1973	4804	671	14	1755	37	113	6.4	2230	46	467	21	92	1.9	12	13	727	15.1	79	11
1974	4408	690	16	1662	38	136	8.2	2138	49	474	22	89	2.0	12	13	519	11.8	68	13
1975	4327	654	15	1577	36	124	7.9	2006	46	416	21	113	2.6	15	13	631	14.6	99	16
1976	3904	605	15	1451	37	132	9.1	1796	46	383	21	89	2.3	8	9	568	14.5	82	14
1977	3686	661	18	1319	36	126	9.6	1775	48	448	25	81	2.2	14	17	511	13.9	73	14
1978	3734	656	18	1294	35	123	9.5	1882	50	445	24	95	2.5	12	13	463	12.4	76	16
1979	3687	682	18	1319	36	135	10.2	1765	48	447	25	116	3.1	15	13	487	13.2	85	17
1980	3440	639	19	1192	35	118	9.9	1733	50	447	26	79	2.3	9	11	436	12.7	65	15
1981	3424	681	20	1,294	38	115	8.9	1,667	49	473	28	58	1.7	9	16	405	11.8	84	21
1982	3514	749	21	1,284	37	156	12.1	1,758	50	497	28	80	2.3	11	14	392	11.2	85	22
1983	3329	693	21	1,370	41	162	11.8	1,632	49	465	28	68	2.0	12	18	259	7.8	54	21
1984	3586	850	24	1,535	43	194	12.6	1,677	47	538	32	67	1.9	10	15	307	8.6	108	35
1985	3642	831	23	1,523	42	190	12.5	1,734	48	568	33	91	2.5	15	16	294	8.1	58	20
1986	3676	917	25	1,501	41	224	14.9	1,764	48	599	34	83	2.3	11	13	328	8.9	83	25
1987	3587	893	25	1,543	43	243	15.7	1,750	49	569	33	71	2.0	16	23	223	6.2	65	29
1988	3730	892	24	1,681	45	253	15.1	1,702	46	554	33	88	2.4	17	19	259	6.9	68	26
1989	3733	1004	27	1,736	47	291	16.8	1,740	47	647	37	96	2.6	14	15	161	4.3	52	32
1990	3689	995	27	1,815	49	296	16.3	1,696	46	664	39	86	2.3	19	22	92	2.5	16	17
50–59				8,222		306	3.7	12,410		1,510	12								
60–69	17,961	2,124	12	17,497	97	760	4.3	16,484	92	3,017	18	315	1.8	39	12	1,485	8.3	193	13
70–79	43,432	6,814	16	16,811	39	1,358	8.1	20,281	47	4,557	22	1,042	2.4	123	12	5,298	12.2	776	15
80–89	35,661	8,149	23	14,659	41	1,946	13.3	17,157	48	5,357	31	781	2.2	124	16	3,064	8.6	722	24
TOTAL	100,743	18,082	18	59,004	59	4,666	7.9	68,026	68	15,105	22	2,224	2.2	305	14	9,939	9.9	1,707	17

SOURCE: Series of Earned Degrees Conferred, National Center for Education Statistics

TABLE 6-3

BACHELORS DEGREES IN THE PHYSICAL SCIENCES BY SUBFIELD AND SEX, 1950 – 1990

Year	Total Phys Sci			Physical Sciences Fields															
				Physics				Chemistry				Geology				Other			
	No.	Women	%W	No.	%T	Wom	%W	No.	%T	Wom	%W	No.	%T	Wom	%W	No.	%T	Wom	%W
1950	17725	1737	10	3414	19	127	4	10619	60	1485	14	3043	17	109	4	649	4	16	2
1951	14296	1420	10	2788	20	117	4	8258	58	1222	15	2717	19	74	3	533	4	7	1
1952	12145	1332	11	2247	19	106	5	6819	56	1102	16	2102	17	76	4	977	8	48	5
1953	10414	1277	12	2005	19	84	4	5943	57	1073	18	1719	17	68	4	747	7	52	7
1954	9880	1273	13	1952	20	75	4	5791	59	1064	18	1632	17	79	5	505	5	55	11
1955	10516	1382	13	1996	19	76	4	5920	56	1139	19	1795	17	92	5	805	8	75	9
1956	11672	1501	13	2335	20	102	4	6178	53	1182	19	2163	19	78	4	996	9	139	14
1957	12934	1613	12	2745	21	122	4	6591	51	1294	20	2570	20	89	3	1028	8	108	11
1958	14352	1669	12	3186	22	144	5	7010	49	1305	19	2827	20	104	4	1329	9	116	9
1959	15460	1766	11	3809	25	141	4	7308	47	1411	19	2878	19	91	3	1465	9	123	8
1960	16057	2016	13	4338	27	172	4	7603	47	1598	21	2465	15	75	3	1651	10	171	10
1961	15500	2008	13	4322	28	230	5	7604	49	1508	20	1870	12	77	4	1704	11	193	11
1962	15894	2146	14	4812	30	188	4	8089	51	1715	21	1430	9	69	5	1563	10	174	11
1963	16276	2236	14	4785	29	237	5	8823	54	1768	20	1087	7	64	6	1581	10	169	11
1964	17527	2450	14	4956	28	241	5	9724	55	1914	20	1113	6	94	8	1734	10	201	12
1965	17916	2532	14	4954	28	246	5	10047	56	1936	19	1131	6	119	11	1784	10	231	13
1966	17186	2333	14	4609	27	224	5	9735	57	1801	19	1329	8	127	10	1513	9	181	12
1967	17794	2402	13	4733	27	267	6	9872	55	1771	18	1458	8	163	11	1731	10	201	12
1968	19442	2674	14	5045	26	296	6	10847	56	1965	18	1718	9	178	10	1832	9	235	13
1969	21591	2952	14	5535	26	322	6	11807	55	2156	18	2014	9	205	10	2235	10	269	12
1970	21551	2969	14	5333	25	329	6	11617	54	2116	18	2286	11	246	11	2315	11	278	12
1971	21549	3014	14	5076	24	343	7	11183	52	2095	19	2415	11	265	11	2875	13	311	11
1972	20887	3148	15	4645	22	323	7	10721	51	2120	20	2573	12	326	13	2948	14	379	13
1973	20809	3121	15	4268	21	313	7	10226	49	1967	19	2929	14	389	13	3386	16	452	13
1974	21267	3536	17	3962	19	337	9	10525	49	2112	20	3256	15	533	16	3544	17	554	16
1975	20896	3838	18	3716	18	362	10	10649	51	2385	22	3324	16	575	17	3207	15	516	16
1976	21559	4139	19	3544	16	388	11	11107	52	2497	22	3362	16	606	18	3546	16	648	18
1977	22618	4551	20	3420	15	358	10	11322	50	2602	23	3879	17	836	22	3997	18	755	19
1978	23175	4987	22	3330	14	369	11	11474	50	2881	25	4344	19	958	22	4027	17	779	19
1979	23363	5287	23	3338	[illegible]	399	12	11643	50	3113	27	4503	19	1058	23	3879	17	717	18
1980	23661	5651	24	3397	[illegible]	434	13	11446	48	3277	29	4600	19	1131	25	4218	18	809	19
1981	23952	5888	25	3441	14	432	13	11347	47	3394	30	5202	22	1303	25	3962	17	759	19
1982	24052	6186	26	3472	14	460	13	11062	46	3491	32	5538	23	1415	26	3980	17	820	21
1983	23234	6350	27	3793	16	482	13	10796	46	3630	34	6102	26	1568	26	2543	11	670	26
1984	23525	6487	28	3907	17	557	14	10704	46	3731	35	6549	28	1615	25	2365	10	584	25
1985	23597	6586	28	4097	17	559	14	10482	44	3791	36	6308	27	1558	25	2710	11	678	25
1986	21620	5927	27	4180	19	611	15	10116	47	3633	36	4974	23	1103	22	2350	11	580	25
1987	19885	5632	28	4330	22	695	16	9661	49	3591	37	3367	17	776	23	2527	13	570	23
1988	17817	5433	30	4103	23	611	15	9158	51	3652	40	2371	13	586	25	2185	12	584	27
1989	17204	5107	30	4339	25	642	15	8654	50	3342	39	2109	12	539	26	2102	12	584	28
1990	16018	4999	31	4182	26	678	16	8126	51	3233	40	1818	11	525	29	1892	12	563	30
50–59	129,394	14,970	12	26,477	20	1,094	4	70,437	54	12,277	17	23,446	18	860	4	9,034	7	739	8
60–69	175,183	23,751	14	48,089	27	2,423	5	94,151	54	18,132	19	15,615	9	1,171	7	17,328	10	2,025	12
70–79	217,694	38,590	18	40,632	19	3,521	9	110,467	51	23,888	22	32,871	15	5,792	18	33,724	15	5,389	16
80–90	218,547	59,247	27	39,059	18	5,483	14	103,426	47	35,532	34	47,120	22	11,594	25	28,942	13	6,638	23
TOTAL	740,818	136,558	18	154,257	21	12,521	8	376,481	51	89,829	24	119,052	16	19,417	16	89,028	12	14,791	17

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

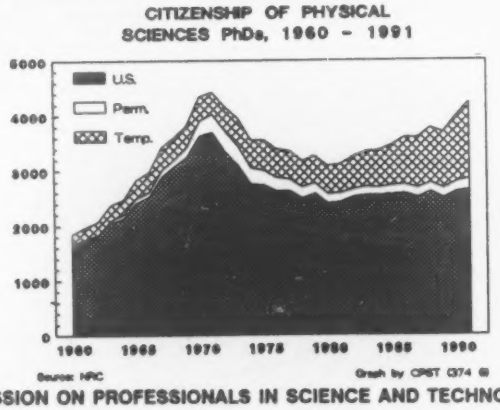
TABLE 6-4

Ph.D. RECIPIENTS IN THE PHYSICAL SCIENCES* BY TYPE OF CITIZENSHIP, 1960–1991

Year	Total	U.S.		Foreign						Citizenship Not Known
				Total		Immigrants		Non–Immigrants		
		No.	%T	No.	%T	No.	%T	No.	%T	
1960	1,861	1,619	87.0	229	12.3	51	2.7	178	9.6	13
1961	1,993	1,696	85.1	269	13.5	48	2.4	221	11.1	28
1962	2,097	1,812	86.4	262	12.5	32	1.5	230	11.0	23
1963	2,428	2,045	84.2	333	13.7	55	2.3	278	11.4	50
1964	2,527	2,130	84.3	343	13.6	74	2.9	269	10.6	54
1965	2,865	2,418	84.4	411	14.3	85	3.0	326	11.4	36
1966	3,059	2,526	82.6	446	14.6	88	2.9	358	11.7	87
1967	3,504	2,891	82.5	540	15.4	124	3.5	416	11.9	73
1968	3,671	3,073	83.7	527	14.4	130	3.5	397	10.8	71
1969	3,919	3,251	83.0	581	14.8	170	4.3	411	10.5	87
1970	4,404	3,631	82.4	709	16.1	275	6.2	434	9.9	64
1971	4,501	3,689	82.0	737	16.4	330	7.3	407	9.0	75
1972	4,233	3,348	79.1	819	19.3	373	8.8	446	10.5	66
1973	4,021	3,098	77.0	856	21.3	348	8.7	508	12.6	67
1974	3,709	2,743	74.0	809	21.8	302	8.1	507	13.7	157
1975	3,631	2,734	75.3	813	22.4	269	7.4	544	15.0	84
1976	3,442	2,619	76.1	765	22.2	247	7.2	518	15.0	58
1977	3,410	2,623	76.9	720	21.1	213	6.2	507	14.9	67
1978	3,234	2,494	77.1	670	20.7	206	6.4	464	14.3	70
1979	3,321	2,570	77.4	685	20.6	199	6.0	486	14.6	66
1980	3,151	2,393	75.9	682	21.6	176	5.6	506	16.1	76
1981	3,208	2,419	75.4	683	21.3	160	5.0	523	16.3	106
1982	3,348	2,511	75.0	733	21.9	146	4.4	587	17.5	104
1983	3,438	2,544	74.0	794	23.1	149	4.3	645	18.8	100
1984	3,459	2,546	73.6	813	23.5	142	4.1	671	19.4	100
1985	3,531	2,549	72.2	902	25.5	166	4.7	736	20.8	80
1986	3,679	2,574	70.0	1,020	27.7	158	4.3	862	23.4	85
1987	3,837	2,498	65.1	1,093	28.5	173	4.5	920	24.0	246
1988	4,046	2,601	64.3	1,166	28.8	167	4.1	999	24.7	279
1989	3,987	2,491	62.5	1,187	29.8	177	4.4	1,010	25.3	309
1990	4,263	2,599	61.0	1,381	32.4	189	4.4	1,192	28.0	283
1991	4,439	2,632	59.3	1,597	36.0	204	4.6	1,393	31.4	210
Totals	110,216	83,367	75.6	23,575	21.4	5,626	5.1	17,949	16.3	3,274

* Physics, Astronomy, Chemistry, and Earth, Atmospheric and Marine Sciences

CHART 6-1



Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 6-5

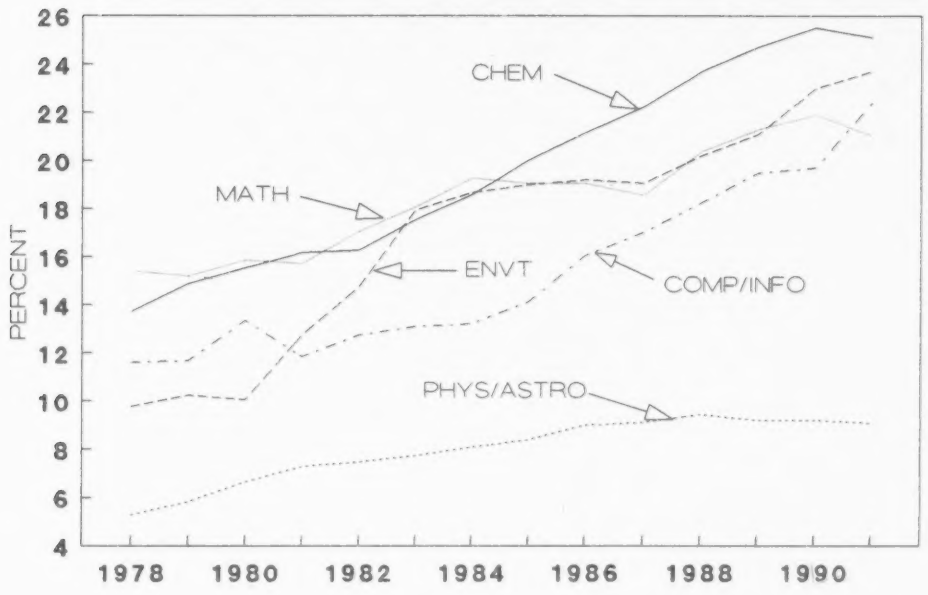
U.S.* CITIZENS EARNING PhDs IN MATH–BASED FIELDS BY SEX, 1978–1991

	Chemistry			Physics/Astron			Earth/Atmos/Marine			Math			Comp/Sci		
Year	Total	Wom	% W	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W
1978	1,293	168	13.0	868	38	4.4	540	56	10.4	666	96	14.4	90	7	7.8
1979	1,335	193	14.5	870	54	6.2	566	52	9.2	603	99	16.4	175	27	15.4
1980	1,269	218	17.2	766	53	6.9	538	60	11.2	582	86	14.8	169	20	11.8
1981	1,329	199	15.0	774	53	6.8	488	48	9.8	525	86	16.4	188	24	12.8
1982	1,369	224	16.4	741	60	8.1	557	96	17.2	499	80	16.0	155	17	11.0
1983	1,424	249	17.5	760	57	7.5	513	88	17.2	457	86	18.8	207	30	14.5
1984	1,415	266	18.8	775	59	7.6	499	97	19.4	443	86	19.4	195	27	13.8
1985	1,432	278	19.4	746	68	9.1	474	92	19.4	418	82	19.6	213	24	11.3
1986	1,413	309	21.9	732	62	8.5	446	81	18.2	402	73	18.2	249	43	17.3
1987	1,472	327	22.2	754	71	9.4	449	90	20.0	396	77	19.4	275	54	19.6
1988	1,451	328	22.6	784	74	9.4	632	120	19.0	386	70	18.1	325	46	14.2
1989	1,376	362	26.3	735	70	9.5	557	120	21.5	428	101	23.6	392	82	20.9
1990	1,334	336	25.2	694	60	8.6	512	117	22.9	362	80	22.1	335	78	23.3
1991	1,311	329	25.1	737	71	9.6	584	143	24.5	439	88	20.0	379	81	21.4

*Includes foreign nationals with permament visas.

CHART 6-2

PERCENT U.S. WOMEN EARNING PhDs IN MATH-BASED FIELDS, 1978 - 1991



SOURCE: NSF

Graph by CPST (290 PWM6)

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 6-6

CHEMISTRY PhDs BY SEX AND RACE/ETHNICITY, 1985 – 1991

(U.S. Citizens Only)

					White		Black		Hispanic		Indian		Asian		
Year	Total	Men	Wom	%Wom	Men	Women	Men	Wom	Men	Wom	Men	Wom	Men	Wom	%Min
1985	1345	1084	261	19.4	990	229	15	4	10	4	2		37	20	6.8
1986	1320	1044	276	20.9	941	241	10	3	18	6	3	2	39	17	7.4
1987	1381	1085	296	21.4	982	261	9	2	27	13	4	2	36	13	7.7
1988	1377	1072	305	22.1	964	271	11	6	32	11	5		34	14	8.2
1989	1298	956	342	26.3	857	310	13	7	25	15	5		34	8	8.2
1990	1398	1046	352	25.2	942	307	8	6	30	20	3		41	13	8.7
1991	1311	982	329	25.1	874	299	14	4	29	8	7	2	45	14	9.4

TABLE 6-7

PHYSICS AND ASTRONOMY PhDs BY SEX AND RACE/ETHNICITY, 1985 – 1991

(U.S. Citizens Only)

					White		Black		Hispanic		Indian		Asian		
Year	Total	Men	Wom	%Wom	Men	Women	Men	Wom	Men	Wom	Men	Wom	Men	Wom	%Min
1985	698	636	62	8.9	578	53	3	1	10	2	1		16	3	5.2
1986	694	638	56	8.1	587	48	6	1	9	2			16	3	5.3
1987	699	634	65	9.3	585	60	4	1	6	2	1		16	2	4.6
1988	723	666	57	7.9	595	51	10	1	12	2		1	18	1	6.2
1989	675	616	59	8.7	545	54	5		12	0	5		28	5	8.1
1990	751	688	63	8.4	616	55	5		11	2			26	6	6.7
1991	737	666	71	9.6	608	63	6		13	2	1		17	5	6.0

TABLE 6-8

EARTH, ATMOSPHERIC AND MARINE PhDs BY SEX AND RACE/ETHNICITY, 1985 – 1991

(U.S. Citizens Only)

					White		Black		Hispanic		Indian		Asian		
Year	Total	Men	Wom	%Wom	Men	Women	Men	Wom	Men	Wom	Men	Wom	Men	Wom	%Min
1985	442	354	88	19.9	331	84	2	0	4	0	1	0	7	1	3.4
1986	422	344	78	18.5	323	75	0	0	4	1	1	1	5	1	3.1
1987	425	342	83	19.5	314	81	0	1	3	0	0	0	8	1	3.1
1988	511	395	116	22.7	374	106	2	0	4	4	1	1	6	2	3.9
1989	529	414	115	21.7	387	108	2	1	4	2	4	2	9	2	4.9
1990	535	410	125	23.4	391	115	1	2	7	4	0	1	3	1	3.6
1991	584	441	143	24.5	411	135	1	1	11	1	2	1	4	3	4.1

SOURCE: Office of Personnel Management, unpublished tabulations

TABLE 6-9

FEDERAL WORKERS EMPLOYED IN THE PHYSICAL SCIENCES BY OCCUPATIONAL TITLE, SEX AND MINORITY STATUS, SEPTEMBER 30, 1991

	ALL EMPLOYEES			TOTAL MINORITY				BLACK		HISPANIC		ASIAN		AM. INDIAN		WHITE	
OCCUPATIONAL TITLE	TOTAL	WOMEN	% W	TOTAL	%	WOMEN	% W	No.	% B	No.	% H	No.	% A	No.	% I	No.	% W
General Physical Science	7,118	1,326	18.6	660	9.3	184	27.9	296	4.2	140	2.0	202	2.8	22	0.3	6,458	90.7
Health Physics	788	156	19.8	120	15.2	33	27.5	49	6.2	17	2.2	50	6.3	4	0.5	668	84.8
Physics	3,843	226	5.9	287	7.5	34	11.8	61	1.6	48	1.2	172	4.5	6	0.2	3,556	92.5
Geophysics	622	71	11.4	46	7.4	4	8.7	6	1.0	12	1.9	26	4.2	2	0.3	576	92.6
Hydrology	2,652	410	15.5	144	5.4	32	22.2	24	0.9	61	2.3	47	1.8	12	0.5	2,508	94.6
Chemistry	7,964	2,127	26.7	1545	19.4	567	36.7	473	5.9	205	2.6	854	10.7	13	0.2	6,419	80.6
Metallurgy	250	13	5.2	41	16.4	1	2.4	3	1.2	6	2.4	32	12.8	0	0.0	209	83.6
Astronomy & Space Science	518	36	6.9	21	4.1	1	4.8	5	1.0	6	1.2	9	1.7	1	0.2	497	95.9
Meteorology	2,626	182	6.9	197	7.5	35	17.8	62	2.4	54	2.1	76	2.9	5	0.2	2,429	92.5
Geology	2,736	527	19.3	136	5.0	36	26.5	26	1.0	46	1.7	42	1.5	22	0.8	2,600	95.0
Oceanography	757	112	14.8	57	7.5	14	24.6	22	2.9	10	1.3	23	3.0	2	0.3	700	92.5
Cartography	4,655	930	20.0	521	11.2	153	29.4	349	7.5	102	2.2	49	1.1	21	0.5	4,134	88.8
Geodesy	320	49	15.3	28	8.8	9	32.1	19	5.9	5	1.6	4	1.3	0	0.0	292	91.3
Land Surveying	544	20	3.7	37	6.8	1	2.7	2	0.4	20	3.7	1	0.2	14	2.6	507	93.2
Forest Products Technology	70	7	10.0	4	5.7	0	0.0	0	0.0	0	0.0	4	5.7	0	0.0	66	94.3
Food Techonolgy	269	91	33.8	49	18.2	18	36.7	19	7.1	6	2.2	22	8.2	2	0.7	220	81.8
Textile Technology	106	59	55.7	22	20.8	14	63.6	14	13.2	0	0.0	8	7.5	0	0.0	84	79.2
Photographic Technology	36	1	2.8	3	8.3	0	0.0	1	2.8	2	5.6	0	0.0	0	0.0	33	91.7
TOTALS	35,874	6,343	17.7	3918	10.9	1136	29.0	1431	4.0	740	2.1	1621	4.5	126	0.4	31,956	89.1

 Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 6-10

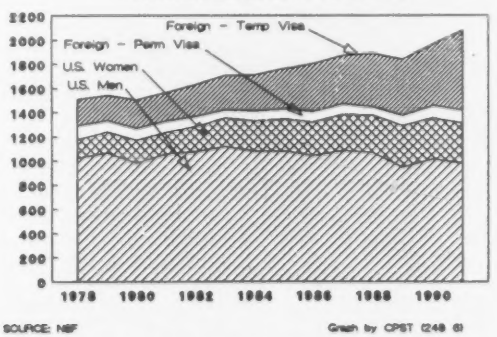
CHEMISTRY PhDs BY SUBFIELD AND SEX, 1960 – 1991

Year of PhD	Total Chemistry	Agri & Food+	Analyt-ical	In-organic	Nuclear	Organic	Pharma-ceutical	Physical	Polymer	Theo-retical	Chem. General	Chem. Other
Total												
1960–69	14586	428	1043	1575	272	5986	470	3980		294	305	233
1970–79	18201	211	1609	2401	244	6131	552	4101	310	528	1405	709
1980–85	12026		1666	1553	91	3511	413	2129	466	293		
1986	1903		257	260	18	510	58	293	72	41	290	104
1987	1974		314	240	13	510	64	302	96	46	299	90
1988	2018		301	250	7	529	73	317	81	50	316	94
1989	1971		289	256	6	505	65	309	78	46	320	97
1990	2102		293	242	13	452	48	322	81	55	529	67
1991	2194		303	259	14	537	82	363	111	45	407	73
Men												
1960–69	13653	404	974	1447	259	5653	452	3710	0	270	274	210
1970–79	16308	176	1482	2103	222	5627	489	3618	292	461	1222	616
1980–85	9921		1384	1262	79	2997	321	1709	399	248	0	0
1986	1507		211	198	16	414	41	222	60	35	238	72
1987	1568		242	181	13	422	48	243	83	29	245	62
1988	1589		241	184	7	440	54	246	69	41	241	66
1989	1474		226	183	6	403	43	222	63	37	227	64
1990	1605		230	169	13	350	26	235	66	46	436	34
1991	1687		221	186	10	429	56	277	87	38	337	46
Women												
1960–69	933	24	69	128	13	333	18	270		24	31	23
1970–79	1893	35	127	298	22	504	63	483	18	67	183	93
1980–85	2105		282	291	12	514	92	420	67	45		
1986	396		46	62	2	96	17	71	12	6	52	32
1987	406		72	59		88	16	59	13	17	54	28
1988	429		60	66		89	19	71	12	9	75	28
1989	497		63	73		102	22	87	15	9	93	33
1990	502		68	60	2	104	20	76	13	14	127	18
1991	507		82	73	4	108	26	86	24	7	70	27
% Women												
1960–69	6.4	5.6	6.6	8.1	4.8	5.6	3.8	6.8		8.2	10.2	9.9
1970–79	10.4	16.6	7.9	12.4	9.0	8.2	11.4	11.8	5.8	12.7	13.0	13.1
1980–85	17.5		16.9	18.7	13.2	14.6	22.3	19.7	14.4	15.4		
1986	20.8		17.9	23.8	11.1	18.8	29.3	24.2	16.7	14.6	17.9	30.8
1987	20.6		22.9	24.6	0.0	17.3	25.0	19.5	13.5	37.0	18.1	31.1
1988	21.3		19.9	26.4	0.0	16.8	26.0	22.4	14.8	18.0	23.7	29.8
1989	25.2		21.8	28.5	0.0	20.2	33.8	28.2	19.2	19.6	29.1	34.0
1990	23.9		23.2	24.8	15.4	23.0	41.7	23.6	16.0	25.5	24.0	26.9
1991	23.1		27.1	28.2	28.6	20.1	31.7	23.7	21.6	15.6	17.2	37.0

+ Deleted in 1980

CHART 6-3

CHEMISTRY PhDs AWARDED BY U.S. UNIVERSITIES, 1978-91



SOURCE: NSF

Graph by CPST (248 6)

FIELD: Biochemistry/Biophysics
SOURCE: Earned Degrees Conferred Series, 1973 thru 1990, U.S. Office of Education (NCES)

TABLE 6-11

BIOCHEMISTRY AND BIOPHYSICS* DEGREES AWARDED BY SEX AND LEVEL OF DEGREE, 1973 – 1990

	BACHELORS			MASTERS			PhDs		
		Women			Women			Women	
YEAR	Total	No.	%	Total	No.	%	Total	No.	%
1973	872	195	22.4	270	74	27.4	636	129	20.3
1974	1,101	254	23.1	249	65	26.1	606	147	24.3
1975	1,355	359	26.5	270	77	28.5	620	147	23.7
1976	1,622	480	29.6	254	72	28.3	616	141	22.9
1977	1,693	495	29.2	314	104	33.1	608	135	22.2
1978	1,752	517	29.5	319	105	32.9	607	146	24.1
1979	1,799	591	32.9	301	131	43.5	600	156	26.0
1980	1,686	596	35.3	268	98	36.6	672	188	28.0
1981	1,837	656	35.7	258	90	34.9	644	189	29.3
1982	1,865	668	35.8	273	104	38.1	650	166	25.5
1983*	1,876	716	38.2	270	105	38.9	656	194	29.6
1984	2,052	843	41.1	254	109	42.9	606	191	31.5
1985	2,111	850	40.3	257	115	44.7	579	184	31.8
1986	2,109	867	41.1	279	114	40.9	571	194	34.0
1987	2,111	917	43.4	265	114	43.0	571	198	34.7
1988	2,044	911	44.6	247	105	42.5	613	203	33.1
1989	1,976	875	44.3	223	101	45.3	670	266	39.7
1990	2,022	892	44.1	293	124	42.3	582	195	33.5
Total	31,883	11,682	36.6	4,864	1,807	37.2	11,107	3,169	28.5

* Includes Biophysics beginning in 1983

Q6-10, 5-7-92
SOURCE: Science and Engineering Doctorates, National Science Foundation

TABLE 6-12

CHEMISTRY DOCTORATES BY RACE/ETHNICITY, 1975 – 1991

(U.S. Citizens and Non-U.S. Permanent Visa-Holders)

	All Races*				White		%	Black		Hispanic		Am. Indian		U Rep	Asian		
Year	Total	Men	Wom	%W	Men	Wom	Wh	Men	Wom	Men	Wom	Men	Wom	Min %	Men	Wom	%A
1975	1,519	1,365	154	10.1	1,182	125	86.0	21	2	9	1	0	0	2.2	79	18	6.4
1976	1,405	1,244	161	11.5	1,063	126	84.6	16	4	9	2	0	0	2.2	102	27	9.2
1977	1,343	1,198	145	10.8	1,021	115	84.6	19	3	16	4	2	0	3.3	80	17	7.2
1978	1,293	1,125	168	13.0	909	131	80.4	24	5	12	2	3	0	3.6	100	21	9.4
1979	1,335	1,142	193	14.5	949	144	81.9	25	4	11	7	1	0	3.6	78	27	7.9
1980	1,269	1,051	218	17.2	874	165	81.9	10	2	9	6	2	1	2.4	84	34	9.3
1981	1,329	1,130	199	15.0	954	168	84.4	16	2	18	4	1	0	3.1	74	19	7.0
1982	1,369	1,145	224	16.4	1,026	188	88.7	11	4	12	4	0	0	2.3	64	24	6.4
1983	1,424	1,175	249	17.5	1,055	207	88.6	14	2	7	14	3	0	2.8	60	23	5.8
1984	1,415	1,149	266	18.8	988	223	85.6	21	2	24	9	3	0	4.2	70	27	6.9
1985	1,432	1,154	278	19.4	1,013	230	86.8	17	6	12	5	2	0	2.9	79	33	7.8
1986	1,413	1,104	309	21.9	952	256	85.5	14	3	19	6	3	2	3.3	74	35	7.7
1987	1,467	1,141	326	22.2	993	270	86.1	11	2	29	15	4	2	4.3	77	31	7.4
1988	1,451	1,123	328	22.6	981	276	86.6	14	7	35	13	5	0	5.1	57	28	5.9
1989	1,378	1,014	364	26.4	868	314	85.8	19	7	26	17	5	0	5.4	73	22	6.9
1990	1,456	1,084	371	25.5	918	300	83.7	8	4	29	19	3	0	4.3	40	13	3.6
Totals	22,298	18,344	3,953	17.7	15,746	3,238	85.1	260	59	277	128	37	5	3.4	1,191	399	7.1

* The data for 'All races' include recipients whose race/ethnicity is unknown.

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 6-13

CHEMISTRY PhDs BY CITIZENSHIP AND VISA TYPE, SEX AND RACIAL/ETHNIC GROUP, 1978 – 1991

		Foreign Citizens				U.S. Citizens											
				Visas						Minorities				Total	%		Un-
Year	Total	Total	%For	Temp	Perm	Total	Men	Wom	% Wom	Black	Hisp	Asian	Ind	Min	Min	White	known
1967	1,773	268	15.1	301	2	1,470											32
1978	1,782	230	12.9			1,515											36
1969	1,967	279	14.2	282	29	1,656											30
1970	2,223	338	15.2			1,863											20
1971	2,211	347	15.7	323	46	1,842											22
1972	2,011	370	18.4			1,605											36
1973	1,855	365	19.7	281	116	1,458											32
1874	1,792	355	19.8			1,407											30
1975	1,776	345	19.4	322	60	1,394											37
1976	1,623	339	20.9			1,259											24
1977	1,571	305	19.4	199	104	1,238											28
1978	1,509	335	22.2	216	119	1,174	1,025	149	12.7	27	13	33	3	76	6.5	1,013	85
1979	1,543	303	19.6	208	95	1,240	1,070	170	13.7	28	13	32	1	74	6.0	1,078	88
1980	1,506	337	22.4	237	100	1,169	984	185	15.8	10	11	40	3	64	5.5	1,023	82
1981	1,568	333	21.2	239	94	1,235	1,056	179	14.5	13	20	26	1	60	4.9	1,102	73
1982	1,633	348	21.3	264	84	1,285	1,076	209	16.3	10	15	35		60	4.7	1,191	34
1983	1,707	352	20.6	283	69	1,355	1,121	234	17.3	11	19	39	3	72	5.3	1,248	35
1984	1,713	381	22.2	298	83	1,332	1,083	249	18.7	18	26	50	3	97	7.3	1,189	46
1985	1,762	417	23.7	330	87	1,345	1,084	261	19.4	19	14	57	2	92	6.8	1,219	34
1986	1,806	486	26.9	393	93	1,320	1,044	276	20.9	13	24	56	5	98	7.4	1,182	40
1987	1,871	490	26.2	399	91	1,381	1,085	296	21.4	11	40	49	6	106	7.7	1,243	32
1988	1,893	517	27.3	442	75	1,376	1,071	305	22.2	17	43	47	5	112	8.1	1,235	29
1989	1,837	545	29.7	461	84	1,292	952	340	26.3	20	40	42	5	107	8.3	1,161	24
1990	2,102	610	29.0	510	100	1,356	1,015	341	25.1	22	55	98	3	178	13.1	1,252	26
1991	2,194	768	35.0	659	109	1,311	982	329	25.1	22	44	118	9	193	14.7	1,210	17

FIELD: Chemistry

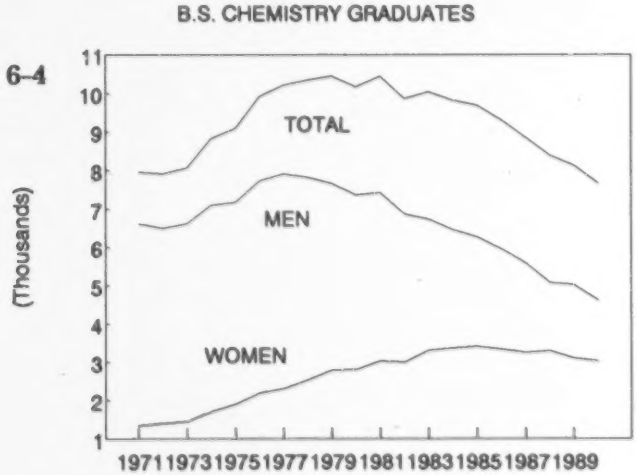
SOURCE: American Chemical Society Committee on Professional Training

TABLE 6-14

CHEMISTRY GRADUATES BY DEGREE LEVEL AND SEX, 1971 – 1990

	B.S. (ACS Certified)			B.S. (Not Certified)			M.S			Ph.D.		
YEAR	Total	Women	% W	Total	Women	% W	Total	Women	% W	Total	Wome	% W
1971	3,708	592	16.0	4,248	744	17.5	1,941	443	22.8	2,097	117	5.6
1972	3,424	587	17.1	4,484	819	18.3	2,019	470	23.3	1,929	207	10.7
1973	3,835	687	17.9	4,225	755	17.9	2,005	439	21.9	1,880	182	9.7
1974	3,844	758	19.7	4,969	948	19.1	1,867	430	23.0	1,732	181	10.5
1975	3,897	794	20.4	5,187	1,110	21.4	1,814	401	22.1	1,781	208	11.7
1976	4,103	855	20.8	5,813	1,332	22.9	1,676	373	22.3	1,622	202	12.5
1977	4,219	949	22.5	5,988	1,355	22.6	1,688	403	23.9	1,563	189	12.1
1978	4,260	995	23.4	6,090	1,540	25.3	1,798	434	24.1	1,532	214	14.0
1979	4,424	1,107	25.0	6,027	1,691	28.1	1,716	448	26.1	1,532	243	15.9
1980	4,170	1,152	27.6	6,000	1,658	27.6	1,698	419	24.7	1,561	274	17.6
1981	4,337	1,223	28.2	6,116	1,805	29.5	1,609	451	28.0	1,613	255	15.8
1982	4,179	1,284	30.7	5,687	1,721	30.3	1,645	491	29.8	1,683	272	16.2
1983	4,233	1,391	32.9	5,810	1,921	33.1	1,569	444	28.3	1,759	300	17.1
1984	4,201	1,420	33.8	5,618	1,952	34.7	1,637	544	33.2	1,777	331	18.6
1985	4,021	1,417	35.2	5,658	1,999	35.3	1,621	524	32.3	1,806	359	19.9
1986	3,892	1,380	35.5	5,403	1,967	36.4	1,620	564	34.8	1,885	389	20.6
1987	3,663	1,303	35.6	5,185	1,954	37.7	1,636	552	33.7	1,936	414	21.4
1988	3,453	1,337	38.7	4,919	1,958	39.8	1,584	530	33.5	1,955	451	23.1
1989	3,384	1,262	37.3	4,741	1,835	38.7	1,710	627	36.7	1,970	509	25.8
1990	3,213	1,227	38.2	4,437	1,809	40.8	1,605	598	37.3	2,131	524	24.6
TOTAL	78,460	21,720	27.7	106,605	30,873	29.0	34,458	9,585	27.8	35,744	5,821	16.3

CHART 6-4



FIELD: Chemistry

SOURCE: 1976 and 1978 Report of Chemists' Salaries and Equipment Status and Salaries 1981, '83, '87, '89 and '90 and Women Chemists, 1990, Office of Manpower Studies, American Chemical Society

TABLE 6-15

ACS CHEMISTS BY SEX AND MINORITY, SELECTED YEARS 1976 – 1990

Year	Black	Hispanic	Am. Ind.	Asian	All Min.	White, Non–Min
Men						
1976	1.0	0.6	0.2	3.0	4.8	95.2
1981	0.9	0.6	0.1	5.2	7.6	92.4
1983	1.1	0.8	0.2	5.9	8.0	91.0
1985	0.9	0.8	0.2	5.6	8.4	90.7
1987	1.1	1.0	0.5	5.6	8.7	91.3
1989	1.0	1.7	0.5	5.8	9.0	91.0
1990	1.1	1.1	0.3	6.2	8.7	90.7
Women						
1976	2.8	0.9	0.1	6.9	10.7	89.3
1981	3.6	0.9	0.2	6.7	12.2	87.8
1983	2.4	1.2	0.1	6.7	10.4	88.8
1985	1.8	1.2	0.2	6.4	10.2	89.2
1987	1.5	1.0	0.3	6.1	9.2	90.8
1989	1.6	1.6	0.6	6.3	10.1	89.9
1990	2.1	1.8	0.5	6.7	11.0	88.6
Both						
1983	1.3	0.9	0.2	6.0	8.4	90.2
1985	1.1	0.9	0.2	5.7	8.7	90.3
1987	1.2	1.0	0.4	5.7	8.8	91.2
1989	1.1	1.7	0.5	5.9	9.2	90.8
1990	1.3	1.2	0.4	6.3	9.2	90.3

TABLE 6-16

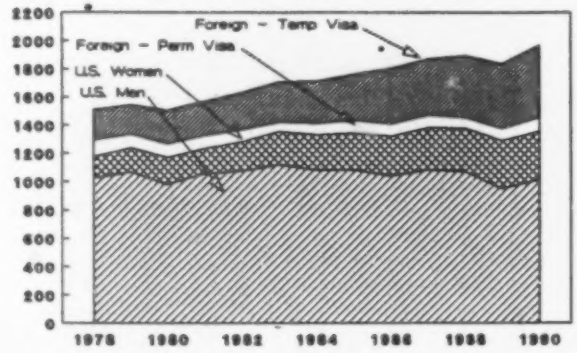
ACS MEMBER CHEMISTS BY AGE, HIGHEST DEGREE AND SEX, 1990

Age Level	BACHELORS %Men	BACHELORS %Wom	MASTERS %Men	MASTERS %Wom	DOCTORATES %Men	DOCTORATES %Wom
20–29	19.0	40.3	7.5	18.0	4.5	12.2
30–39	33.6	37.1	31.9	37.8	29.6	43.3
40–49	20.8	14.8	30.4	26.2	32.6	27.0
50–59	17.6	5.8	19.6	13.8	23.6	12.4
60–69	9.0	2.0	10.6	4.2	9.7	5.2

Columns may not add to 100 due to rounding

CHART 6-5

CHEMISTRY PhDs AWARDED BY U.S. UNIVERSITIES, 1978–90



SOURCE: NSF

Graph by CPST 0248 E8–7 CHEMPHDS

TABLE 6-17

ACS MEMBER CHEMISTS BY DEGREE AND MINORITY, SELECTED YEARS, 1967 – 1990

Year	Black BS	Black MS	Black PhD	Black All	Hispanic BS	Hispanic MS	Hispanic PhD	Hispanic All	Am. Indian BS	Am. Indian MS	Am. Indian PhD	Am. Indian All	Asian BS	Asian MS	Asian PhD	Asian All	All Minorities* BS	All Minorities* MS	All Minorities* PhD	All Minorities* All	White Non–Hisp BS	White Non–Hisp MS	White Non–Hisp PhD	White Non–Hisp All
1976	1.2	1.8	1.0	1.2	0.7	0.8	0.5	0.6	0.2	0.0	0.2	0.2	2.1	2.8	4.2	3.3	4.2	5.4	5.9	5.3	95.8	94.6	94.1	94.7
1983	1.8	1.6	1.0	1.3	1.0	1.1	0.8	0.9	0.4	0.0	0.1	0.2	3.0	4.5	8.1	6.0	6.2	7.2	10.0	8.4	92.6	91.6	88.8	90.2
1987	1.7	1.0	0.9	1.1	1.2	0.9	0.9	1.0	0.5	0.4	0.4	0.4	2.3	5.0	7.3	5.7	6.2	8.0	10.1	8.8	93.6	92.0	89.9	91.2
1989	1.7	1.2	0.9	1.1	2.1	1.7	1.5	1.7	0.7	0.4	0.4	0.5	2.8	5.5	7.3	5.9	8.1	9.4	10.6	9.8	91.1	89.9	88.0	89.2
1990	1.6	1.3	0.9	1.1	1.1	0.9	0.8	0.9	0.7	0.3	0.3	0.4	3.1	5.3	8.7	6.7	7.7	9.0	11.4	10.1	92.3	91.0	88.6	89.9

*Includes Other Race in 1967 and 1989

Source: Women Chemists, 1990, American Chemical Society

TABLE 6-18

TENURE STATUS OF ACADEMIC ACS CHEMISTS BY RANK, SEX AND HIGHEST DEGREE AWARDED BY EMPLOYING INSTITUTION, 1990

	Full Professor				Assoc Professor				Asst Professor			
	Total	Ten–ured	Tenure Track	Not in Track	Total	Ten–ured	Tenure Track	Not in Track	Total	Ten–ured	Tenure Track	Not in Track
BS–GRANTING UNIVERSITIES												
Total	850	831	14	5	322	272	46	4	345	29	279	37
Men	769	752	12	5	246	203	41	2	239	25	191	23
Women	81	79	2	0	76	69	5	2	106	4	88	14
% Wom	9.5	9.5	14.3	0.0	23.6	25.4	10.9	50.0	30.7	13.8	31.5	37.8
MS–GRANTING UNIVERSITIES												
Total	401	396	4	1	127	109	17	1	124	18	99	7
Men	376	371	4	1	106	91	14	1	87	14	69	4
Women	25	25	0	0	21	18	3	0	37	4	30	3
% Wom	6.2	6.3	0.0	0.0	16.5	16.5	17.6	0.0	29.8	22.2	30.3	42.9
PhD–GRANTING UNIVERSITIES												
Total	1610	1582	15	13	515	448	49	18	505	25	445	35
Men	1541	1515	14	12	448	388	44	16	414	20	371	23
Women	69	67	1	1	67	60	5	2	91	5	74	12
% Wom	4.3	4.2	6.7	7.7	13.0	13.4	10.2	11.1	18.0	20.0	16.6	34.3
ALL UNIVERSITIES												
Total	2861	2809	33	19	964	829	112	23	974	72	823	79
Men	2686	2638	30	18	800	682	99	19	740	59	631	50
Women	175	171	3	1	164	147	13	4	234	13	192	29
% Wom	6.1	6.1	9.1	5.3	17.0	17.7	11.6	17.4	24.0	18.1	23.3	36.7

ASSISTANT, ASSOCIATE, and FULL PROFESSORS employed in BS– MS– or PhD–GRANTING INSTITUTIONS by TENURE and SEX

	Total	Ten–ured	Tenure Track	Not in Track
Total	4799	3710	968	121
Men	4226	3379	760	87
Women	573	331	208	34
% Wom	11.9	8.9	21.5	28.1

Source: Women Chemists, 1990, American Chemical Society

TABLE 6-19

ACS CHEMISTS BY EMPLOYENT STATUS, HIGHEST DEGREE, AND SEX, 1990

	Full–Time	Part–Time	Postdoc	Seeking Empl	Unemploy–ment Rate	Not Seek–ing Empl	Total
BACHELORS							
Men	5862	51	1	68	1.1	76	6058
Women	2157	74	4	32	1.4	63	2330
% Wom	26.9	59.2	80.0	32.0		45.3	27.8
MASTERS							
Men	4259	37	3	53	1.2	55	4407
Women	1403	68	2	18	1.2	40	1531
% Wom	24.8	64.8	40.0	25.4		42.1	25.8
PhDs							
Men	16472	162	579	181	1.0	98	17492
Women	2136	99	171	25	1.0	52	2483
% Wom	11.5	37.9	22.8	12.1		34.7	12.4
Total							
Men	26593	250	583	302	1.1	229	27957
Women	5696	241	177	75	1.2	155	6344
% Wom	17.6	49.1	23.3	19.9		40.4	18.5

TABLE 6-20

ACS CHEMISTS BY EMPLOYER TYPE, HIGHEST DEGREE, AND SEX, 1990

	Industry	Govern–ment	Other Non–academic	High School	College or University	Total
BACHELORS						
Men	4323	569	708	32	137	5769
Women	1514	236	269	30	69	2118
% Wom	25.9	29.3	27.5	48.4	33.5	26.9
MASTERS						
Men	2887	427	401	157	323	4195
Women	792	155	139	104	182	1372
% Wom	21.5	26.6	25.7	39.8	36.0	24.6
PhDs						
Men	8442	1283	1090	35	5339	16189
Women	925	188	145	13	813	2084
% Wom	9.9	12.8	11.7	27.1	13.2	11.4
Total						
Men	15652	2279	2199	224	5799	26153
Women	3231	579	553	147	1064	5574
% Wom	17.1	20.3	20.1	39.6	15.5	17.6

Source: Women Chemists, 1990, American Chemical Society

TABLE 6-21

ACS ACADEMIC CHEMISTS BY AGE, RANK, AND SEX

	Full prof	Assoc Prof	Asst prof	Instr	Res assoc	Other nonfaculty	No rank	Total
20–29								
Total	0	1	121	42	250	88	10	512
Men	0	0	81	19	184	53	6	343
Women	0	1	40	23	66	35	4	169
% Wom		100.0	33.1	54.8	26.4	39.8	40.0	33.0
30–39								
Total	74	307	740	132	474	162	32	1921
Men	66	265	569	87	367	108	23	1485
Women	8	42	171	45	107	54	9	436
% Wom	10.8	13.7	23.1	34.1	22.6	33.3	28.1	22.7
40–49								
Total	1027	523	165	109	152	122	82	2180
Men	949	425	129	58	109	76	64	1810
Women	78	98	36	51	43	46	18	370
% Wom	7.6	18.7	21.8	46.8	28.3	37.7	22.0	17.0
50–59								
Total	1416	256	37	62	64	60	65	1960
Men	1340	214	21	35	44	42	59	1755
Women	76	42	16	27	20	18	6	205
% Wom	5.4	16.4	43.2	43.5	31.3	30.0	9.2	10.5
60–69								
Total	663	73	15	29	18	30	13	841
Men	611	51	11	22	12	25	8	740
Women	52	22	4	7	6	5	5	101
% Wom	7.8	30.1	26.7	24.1	33.3	16.7	38.5	12.0
All Years								
Total	3180	1160	1078	374	958	462	202	7414
Men	2966	955	811	221	716	304	160	6133
Women	214	205	267	153	242	158	42	1281
% Wom	6.7	17.7	24.8	40.9	25.3	34.2	20.8	17.3

TABLE 6-22

ACS ACADEMIC CHEMISTS BY INSTITUTION TYPE AND SEX, 1990

	AA Deg	BS Deg	MS Deg	PhD Deg	Med School	Total
Total	551	1742	768	4106	602	7769
Men	418	1390	645	3478	481	6412
Women	133	352	123	628	121	1357
% Wom	24.1	20.2	16.0	15.3	20.1	17.5

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 6-23

PhD AWARDS IN PHYSICS AND ASTRONOMY BY SUBFIELD AND SEX, 1960 – 1991

Subfields	Total PhDs						Number of Women						% Women					
	'60–69	'70–79	'80–88	1989	1990	1991	'60–69	'70–79	'80–88	1989	1990	1991	'60–69	'70–79	'80–88	1989	1990	1991
PHYSICS & ASTRONOMY Total	9836	13617	11016	1160	1392	1406	213	574	940	118	149	152	2.2	4.2	8.5	10.2	10.7	10.8
Astronomy(1)	36	614	496	41	52	50	2	53	71	8	13	7	5.6	8.6	14.3	19.5	25.0	14.0
Astrophysics(1)	67	657	588	56	76	75	5	30	56	8	7	6	7.5	4.6	9.5	14.3	9.2	8.0
Astronomy/Astrophysics(1)	435						28						6.4					
Acoustics	94	150	150	15	21	12		3	15		2	2		2.0	10.0		9.5	16.7
Atomic & Molecular	1029	1191	721	67	87	76	21	36	54	8	7	4	2.0	3.0	7.5	11.9	8.0	5.3
Electron(2)			21	4	2	1			2						9.5			
Electromagnetism(3)	232	115					3	2					1.3	1.7				
Elementary Particles	1561	1749	1417	124	162	182	35	72	86	10	14	20	2.2	4.1	6.1	8.1	8.6	11.0
Fluids	277	201	143	13	17	14	8	7	12	1	1		2.9	3.5	8.4	7.7	5.9	0.0
Mechanics(4)	63	37						2						5.4				
Nuclear Structure(5)	1586	1499	774	73	73	66	25	49	61	8	5	7	1.6	3.3	7.9	11.0	6.8	10.6
Optics	103	336	515	71	76	84	2	6	48	7	5	13	1.9	1.8	9.3	9.9	6.6	15.5
Plasma	63	724	644	57	42	58		16	30	4	2	2		2.5	4.7	7.0	4.8	3.4
Polymer(2)			86	6	11	17			12	1	3	3			14.0	16.7	27.3	17.6
Solid State	2530	3334	2485	274	306	371	39	143	218	23	35	41	1.5	4.3	8.8	8.4	11.4	11.1
Theoretical Physics(6)	260						3						1.2					
Thermal(7)	123	122	12				4	5					3.3	4.1				
Physics, General	598	1730	1903	251	325	247	18	88	147	20	32	29	3.0	5.1	7.7	8.0	9.8	11.7
Physics, Other	779	1358	1061	108	142	155	20	60	128	20	23	18	2.6	4.4	12.1	18.5	16.2	11.6

(1) "Astronomy/astrophysics" were combined until 1969. (2) Subfield introduced in 1983. (3) Originally "Electricity and magnetism", then "Electromagnetism" in 1966. Subfield deleted in 1980. (4) Deleted in 1977. (5) "Nuclear structure" until 1963. (6)Deleted in 1962. (7) "Heat (Thermal)" in 1960. "Thermal phenomena"in 1963. "Thermal physics in 1967, deleted in 1982.

SOURCE: Science and Engineering Doctorates, National Science Foundation

TABLE 6-24

PHYSICS AND ASTRONOMY DOCTORATES BY RACE/ETHNICITY, 1975 – 1990

(U.S. Citizens and Non-U.S. Permanent Visa–Holders)

Year	All Races*				White			Black		Hispanic		Am. Indian		U–Rep	Asian		
	Total	Men	Wom	%W	Men	Wom	% Wh	Men	Wom	Men	Wom	Men	Wom	Min %	Men	Wom	%A
1975	1,034	979	55	5.3	827	46	84.4	10	1	9	0	0	0	1.9	68	6	7.2
1976	967	951	36	3.6	816	27	85.4	3	2	6	0	0	0	1.1	48	4	5.3
1977	919	868	51	5.5	707	40	81.3	10	0	13	0	4	0	2.9	53	10	6.9
1978	868	830	38	4.4	685	25	81.8	8	0	6	0	1	0	1.7	49	9	6.7
1979	870	816	54	6.2	650	44	79.8	8	0	13	2	0	0	2.6	57	6	7.2
1980	766	713	53	6.9	579	43	81.2	4	0	11	1	0	0	2.1	41	5	6.0
1981	774	721	53	6.8	594	41	82.0	5	1	8	0	0	0	1.8	51	5	7.2
1982	741	681	60	8.1	600	45	87.0	10	1	6	3	3	0	3.1	33	10	5.8
1983	760	703	57	7.5	604	51	86.2	9	0	5	0	3	0	2.2	48	5	7.0
1984	775	716	59	7.6	628	49	87.4	11	0	13	1	1	0	3.4	40	7	6.1
1985	746	678	68	9.1	603	54	88.1	3	1	11	2	1	0	2.4	30	8	5.1
1986	732	670	62	8.5	598	50	88.5	7	1	12	3	0	0	3.1	31	6	5.1
1987	754	683	71	9.4	613	62	89.5	6	1	10	2	1	0	2.7	30	5	4.6
1988	784	710	74	9.4	615	54	85.3	11	1	12	3	0	1	3.6	38	14	6.6
1989	735	665	70	9.5	571	56	85.3	5	0	15	1	5	0	3.5	46	13	8.0
1990	760	684	76	10.0	616	61	89.1	5	0	13	2	0	0	2.6	50	13	8.3
Totals	13,005	12,068	937	7.2	10,306	748	85.0	115	9	163	20	19	1	2.5	719	126	6.5

* The data for All Races include recipients whose race/ethnicity is unknown.

FIELD: Physics and Astronomy

SOURCE: Doctorate Records File and Summary Reports: Doctorate Recipients from United States Universities, 1974 – 1990, National Research Council

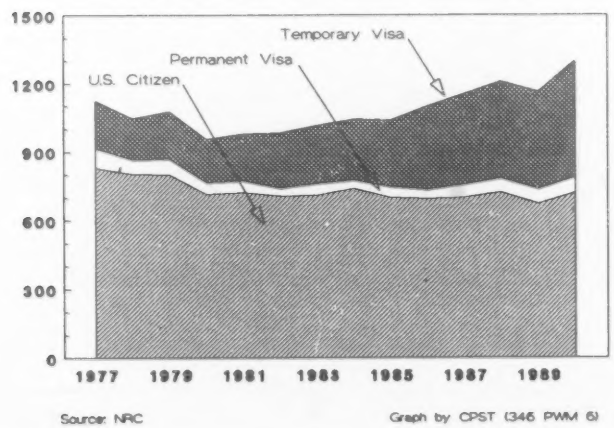
TABLE 6-25

PHYSICS AND ASTRONOMY PhD AWARDS BY CITIZENSHIP AND VISA TYPE, 1967 – 1990

YEAR	TOTAL	U.S.		FOREIGN						Citizen–ship Unknown
				Total		Immigrant		Non–Immigrant		
		No.	%	No.	%	No.	%	No.	%	
1967	1,295	1,036	80.0	224	17.3	67	5.2	254	19.6	34
1978	1,422	1,165	81.9	215	15.1					41
1969	1,452	1,194	82.2	221	15.2	58	4.0	278	19.1	35
1970	1,657	1,337	80.7	285	17.2				0.0	33
1971	1,740	1,375	79.0	318	18.3	72	4.1	375	21.6	45
1972	1,635	1,279	78.2	330	20.2					26
1973	1,590	1,185	74.5	372	23.4	69	4.3	335	21.1	30
1874	1,334	971	72.8	336	25.2					27
1975	1,293	921	71.2	349	27.0	67	5.2	312	24.1	23
1976	1,235	906	73.4	303	24.5					25
1977	1,149	830	72.2	294	25.6	86	7.5	208	18.1	25
1978	1,066	803	75.3	245	23.0	64	6.0	181	17.0	18
1979	1,108	800	72.2	277	25.0	70	6.3	207	18.7	31
1980	983	715	72.8	240	24.4	51	5.2	189	19.2	28
1981	1,015	721	70.4	256	24.9	53	5.2	203	20.0	47
1982	1,013	706	69.6	277	27.3	35	3.5	242	23.9	31
1983	1,043	709	67.9	307	29.5	51	4.9	256	24.5	27
1984	1,080	739	68.4	302	27.9	36	3.3	266	24.6	39
1985	1,080	698	64.6	338	31.3	48	4.4	290	26.9	45
1986	1,187	694	58.3	405	34.1	40	3.4	365	30.7	90
1987	1,237	699	56.5	455	36.6	56	4.5	399	32.3	85
1988	1,207	722	56.5	485	36.6	62	5.1	423	35.0	98
1989	1,278	673	52.7	489	38.3	62	5.3	427	33.4	116
1990	1,392	719	51.7	580	41.7	69	5.0	511	36.7	93
TOTAL	30,491	21,597	70.8	7,903	25.9	1,116	3.7	5,721	18.8	1,093

CHART 6-6

PHYSICS PhDs BY CITIZENSHIP AND VISA TYPE, 1977 - 1990



SOURCE: ***Enrollments and Degrees,*** American Institute of Physics Pub. No. R-151.28

TABLE 6-26
PHYSICS DEGREES AWARDED BY SEX, CITIZENSHIP AND MINORITY GROUP, 1989-90

Type of degrees	Sex	Total no. of degrees	Black		Native American Indian	Hispanic		Oriental		Asian Indian		Arab	
			U.S.	Foreign		U.S.	Foreign	U.S.	Foreign	U.S.	Foreign	U.S.	Foreign
Bachelor's	Men	4345	103	11	6	63	17	154	66	21	29	23	24
	Women	766	39	2	–	7	–	33	5	8	7	1	1
	Total	5111	142	13	6	70	17	187	71	29	36	24	25
Master's enroute	Men	943	10	1	1	12	13	25	227	7	51	–	9
	Women	166	2	1	–	–	1	9	62	2	14	1	2
	Total	1109	12	2	1	12	14	34	289	9	65	1	11
Terminal master's	Men	622	13	8	–	3	8	15	73	5	21	2	12
	Women	126	2	–	–	1	1	3	19	4	11	1	2
	Total	748	15	8	–	4	9	18	92	9	32	3	14
Doctor's	Men	1074	5	5	–	3	15	22	220	5	73	–	21
	Women	109	–	–	–	1	2	7	30	1	10	–	2
	Total	1183	5	5	–	4	17	29	250	6	83	–	23

**Minorities in AIP surveys are defined as groups with a low representation in the physics community, but one whose participation has aroused considerable interest.*

FIELD: Astronomy/Astrophysics

Source: Science and Engineering Degrees 1966–90 a Source Book, National Science Foundation, NSF 90–312

TABLE 6-27
ASTRONOMY AND ASTROPHYSICS DEGREES AWARDED BY SEX AND LEVEL OF DEGREE, 1973 – 1990

YEAR	Bachelors			Masters			PhDs		
	Total	Women	%Wom	Total	Women	%Wom	Total	Women	%Wom
1966	86	10	11.6	59	9	15.3	66	3	4.5
1967	100	11	11.0	69	11	15.9	64	5	7.8
1968	115	22	19.1	80	12	15.0	98	9	9.2
1969	118	11	9.3	107	7	6.5	112	7	6.3
1970	139	19	13.7	92	9	9.8	111	8	7.2
1971	136	9	6.6	108	14	13.0	113	8	7.1
1972	159	24	15.1	167	12	7.2	129	8	6.2
1973	143	26	18.2	92	12	13.0	131	6	4.6
1974	179	35	19.6	89	12	13.5	133	6	4.5
1975	143	28	19.6	113	15	13.3	131	12	9.2
1976	166	17	10.2	89	8	9.0	150	11	7.3
1977	152	21	13.8	81	14	17.3	120	9	7.5
1978	128	26	20.3	95	12	12.6	138	7	5.1
1979	120	20	16.7	116	15	12.9	115	8	7.0
1980	122	24	19.7	79	9	11.4	121	13	10.7
1981	129	26	20.2	58	9	15.5	109	11	10.1
1982	113	21	18.6	80	11	13.8	102	16	15.7
1983*	96	24	25.0	68	12	17.6	115	15	13.0
1984	95	20	21.1	67	10	14.9	98	12	12.2
1985	119	30	25.2	91	15	16.5	100	11	11.0
1986	149	23	15.4	83	11	13.3	109	9	8.3
1987	130	23	17.7	71	16	22.5	100	13	13.0
1988	126	19	15.1	88	17	19.3	130	16	12.3
1989	164	37	22.6	96	14	14.6	113	16	14.2
1990	103	33	32.0	89	19	21.3	128	20	15.6
Total	2,377	453	19.1	1,545	231	15.0	2,143	211	9.8

* Doctorate data are from the National Research Council Survey of Earned Doctorates.
Bachelors and Masters data are from the National Center for Education Statistics' Earned Degrees and Completions Surveys.

FIELD: Physics

SOURCE: Graduate Student Surveys, American Institute of Physics, 1982 – 1991

TABLE 6-28

GRADUATE PHYSICS STUDENTS BY MINORITY GROUP AND SEX, SELECTED YEARS 1980–81 THRU 1989–90

YEAR	Black			Amer	Hispanic					Asian	Oriental			Arab	Total	Total	Total
	U.S.	Foreign	Total	Ind	Puerto Rican	Mex. Amer.	Other U.S.	Other Foreign	Other Total	Indian	U.S.	Foreign	Total		Minority	Response	Population
TOTAL MEN AND WOMEN																	
1980–81	70	24	94	12	21	15	18	121	175	360	88	612	700	171	1,512	6,498	9,934
1982–83	46	32	78	9	17	11	23	144	195	351	87	847	934	210	1,777	6,442	10,429
1984–85	42	35	77	12	18	16	44	115	193	374	101	1,149	1,250	180	2,086	6,525	11,337
1986–87	52	32	84	23	19	16	31	91	157	387	129	1,577	1,706	174	2,531	7,105	12,011
1987–88	59	28	87	14	18	16	42	91	167	353	133	1,748	1,881	163	2,665	7,327	13,143
1988–89	68	35	103	15	16	17	52	100	185	372	146	1,721	1,867	135	2,677	7,391	13,361
1989–90	77	29	106	20	19	29	68	106	222	370	186	2,041	2,227	145	3,090	8,294	13,708
% MINORITY																	
1980–81	1.1	0.4	1.4	0.2	0.3	0.2	0.3	1.9	2.7	5.5	1.4	9.4	10.8	2.6	23.3		
1982–83	0.7	0.5	1.2	0.1	0.3	0.2	0.4	2.2	3.0	5.4	1.4	13.1	14.5	3.3	27.6		
1984–85	0.6	0.5	1.2	0.2	0.3	0.2	0.7	1.8	3.0	5.7	1.5	17.6	19.2	2.8	32.0		
1986–87	0.7	0.5	1.2	0.3	0.3	0.2	0.4	1.3	2.2	5.4	1.8	22.2	24.0	2.4	35.6		
1987–88	0.8	0.4	1.2	0.2	0.2	0.2	0.6	1.2	2.3	4.8	1.8	23.9	25.7	2.2	36.4		
1988–89	0.9	0.5	1.4	0.2	0.2	0.2	0.7	1.4	2.5	5.0	2.0	23.3	25.3	1.8	36.2		
1989–90	0.9	0.3	1.3	0.2	0.2	0.3	0.8	1.3	2.7	4.5	2.2	24.6	26.9	1.7	37.3		
WOMEN																	
1980–81	10	0	10	2	3	0	2	10	15	66	15	79	94	12	199	560	
1982–83	7	2	9	1	2	2	1	10	15	68	16	123	139	27	259	709	
1984–85	8	3	11	3	6	2	6	15	29	70	16	159	175	16	304	783	
1986–87	11	1	12	2	3	1	0	10	14	96	20	248	268	16	408	924	
1987–88	14	6	20	4	1	1	5	12	19	88	20	283	303	15	449	1,025	
1988–89	13	5	18	0	2	2	6	9	19	82	23	289	312	13	444	1,035	
1989–90	13	6	19	0	2	3	6	14	25	85	32	280	312	13	454	1,161	
% WOMEN																	
1980–81	14.3	0.0	10.6	16.7	14.3	0.0	11.1	8.3	8.6	18.3	17.0	12.9	13.4	7.0	13.2		
1982–83	15.2	6.3	11.5	11.1	11.8	18.2	4.3	6.9	7.7	19.4	18.4	14.5	14.9	12.9	14.6		
1984–85	19.0	8.6	14.3	25.0	33.3	12.5	13.6	13.0	15.0	18.7	15.8	13.8	14.0	8.9	14.6		
1986–87	21.2	3.1	14.3	8.7	15.8	6.3	0.0	11.0	8.9	24.8	15.5	15.7	15.7	9.2	16.1		
1987–88	23.7	21.4	23.0	28.6	5.6	6.3	11.9	13.2	11.4	24.9	15.0	16.2	16.1	9.2	16.8		
1988–89	19.1	14.3	17.5	0.0	12.5	11.8	11.5	9.0	10.3	22.0	15.8	16.8	16.7	9.6	16.6		
1989–90	16.9	20.7	17.9	0.0	10.5	10.3	8.8	13.2	11.3	23.0	17.2	13.7	14.0	9.0	14.7		

FIELD: Physics and Astronomy

SOURCE: Graduate Student Survey, American Institute of Physics, AIP Pubs. R–207,'17,'18,'19,'20,'21,'23; 1985,'86,'87,'88,'89 and '91.

TABLE 6-29

GRADUATE PHYSICS STUDENTS AND DEGREE RECIPIENTS 1983–84 THRU 1989–90

YEAR	Total Population	Number Respondents	Percent Women	Men	Percent U.S. Citizens	Foreign Citizens
ALL GRADUATE STUDENTS						
1983–84	10,922	6,401	12%	88%	65%	35%
1984–85	11,337	6,525	12	88	64	36
1985–86	12,011	6,790	13	87	62	38
1986–87	12,616	7,105	13	87	61	39
1987–88	13,143	7,327	14	86	60	40
1988–89	13,361	7,391	14	86	59	41
1989–90	13,708	8,294	14	86	59	41
FIRST–YEAR GRADUATE STUDENTS						
1983–84	2,855	1,337	12%	88%	62%	38%
1984–85	2,863	1,303	13	87	61	39
1985–86	2,981	1,347	15	85	58	42
1986–87	3,162	1,364	15	85	57	43
1987–88	3,274	1,159	15	85	59	41
1988–89	3,132	1,329	15	85	58	42
1989–90	3,059	1,775	16	84	56	44
TERMINAL MASTERS DEGREE RECIPIENTS						
1983–84	657	257	14%	86%	80%	20%
1984–85	629	269	13	87	80	20
1985–86	704	277	16	84	81	19
1986–87	623	295	16	84	82	18
1987–88	698	246	16	84	85	15
1988–89	681	275	16	84	82	18
1989–90	748	345	17	83	77	13
DOCTORATE DEGREE RECIPIENTS						
1983–84	971	542	8%	92%	75%	25%
1984–85	972	605	8	92	69	31
1985–86	1051	623	9	91	66	34
1986–87	1105	710	9	91	62	38
1987–88	1150	682	10	90	62	38
1988–89	1112	708	8	92	61	39
1989–90	1183	722	9	91	60	40

TABLE 6-30

GRADUATE ASTRONOMY STUDENTS & DEGREE RECIPIENTS 1983–84 THRU 1989–90

YEAR	Total Population	Number Respondents	Percent Women	Men	Percent U.S. Citizens	Foreign Citizens
ALL GRADUATE STUDENTS						
1983–84	688	461	16%	84%	78%	22%
1984–85	716	406	19	81	78	22
1985–86	711	486	19	81	76	25
1986–87	755	512	20	80	75	25
1987–88	731	527	18	82	77	23
1988–89	780	547	19	81	77	23
1989–90	842	547	18	82	75	25
FIRST–YEAR GRADUATE STUDENTS						
1983–84	154	90	22%	78%	72%	28%
1984–85	151	80	25	75	72	28
1985–86	170	107	22	78	69	31
1986–87	173	88	16	84	76	24
1987–88	171	101	18	82	74	26
1988–89	169	107	20	80	74	26
1989–90	186	110	20	80	75	25
TERMINAL MASTERS DEGREE RECIPIENTS						
1983–84						
1984–85						
1985–86						
1986–87	23	15	15%	85%	80%	20%
1987–88	28	10	29	71	90	10
1988–89	116	6	29	71	90	10
1989–90	17	10				
DOCTORATE DEGREE RECIPIENTS						
1983–84	74	54	16%	84%	83%	17%
1984–85	66	55	13	87	89	11
1985–86	86	48	7	93	83	17
1986–87	72	49	12	88	88	12
1987–88	94	67	14	86	69	31
1988–89	94	56	17	83	68	32
1989–90	89	64	19	81	69	31

FIELD: Earth, Atmospheric and Marine Sciences

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 6-31

PhD AWARDS IN EARTH, ATMOSPHERIC & MARINE SCIENCES BY SUBFIELD AND SEX, 1960 – 1991

	Year of Doctorate														
	1960–69			1970–79			1980–89			1990			1991		
Subfields	Total	Wom	%Wom	Total	Wom	%Wom	Total	Wom	%Wom	Total	Wom	%Wom	Total	Wom	%Wom
TOTAL	3526	69	2.0	6171	385	6.2	7034	1154	16.4	769	149	19.4	837	185	22.1
Atmospheric Physics & Chem				69	4	5.8	194	14	7.2	18	1	5.6	20	2	10.0
Atmospheric Dynamics				93	5	5.4	225	21	9.3	20	4	20.0	21	3	14.3
Meteorology(9)	310	4	1.3	375	11	2.9	195	15	7.7	20	3	15.0	31	7	22.6
Atmos & Met Sci, Gen(2)							92	10	10.9	23	5	21.7	26	2	7.7
Atmos & Met Sci, Other				145	13	9.0	214	20	9.3	2	1	50.0	10	1	10.0
Geology(5)							991	200	20.2	167	32	19.2	191	34	17.8
Structural Geology(5)	194	4	2.1	216	12	5.6	72	8	11.1						
Geochemistry(4)	41	3	7.3	481	39	8.1	489	93	19.0	56	9	16.1	63	19	30.2
Geophysics & Seismology(6)				254	20	7.9	884	103	11.7	91	15	16.5	113	17	15.0
Geophysics(6)	316	1	0.3	483	14	2.9									
Paleontology	339	9	2.7	369	44	11.9	240	50	20.8	21	2	9.5	24	7	29.2
Minerology, Petrology(6)	50	6	12.0	472	30	6.4	322	69	21.4	26	4	15.4	36	15	41.7
Fuel Tech & Petro Eng(1)	23		0.0	82	4	4.9									
Mineral, Petrol, Geochem(6)	755	20	2.6												
Stratigraphy, Sedimentation	572	4	0.7	485	26	5.4	306	52	17.0	25	5	20.0	29	8	27.6
Geomorph & Glacial Geology	115	4	3.5	228	8	3.5	140	24	17.1	14	1	7.1	18	2	11.1
Applied Geology(1)	27	1	3.7	237	5	2.1	125	7	5.6	6	3	50.0	1	0	0.0
Applied geo, geo eng(1)	233	1	0.4												
Geological Sciences, Gen(10)							105	23	21.9	31	5	16.1	34	11	32.4
Geological Sciences, Oth(10)							167	37	22.2	27	8	29.6	36	10	27.8
Earth Sciences, General(10)	121	5	4.1	372	17	4.6	131	12	9.2						
Earth Sciences, Other(10)	97	1	1.0	264	18	6.8	66	11	16.7						
Environmental Sciences(3)				420	51	12.1	516	110	21.3	50	11	22.0	35	13	37.1
Hydrology & Water Resours(7)	65	1	1.5	215	1	0.5	226	25	11.1	13	1	7.7	16	2	12.5
Oceanography	268	5	1.9	843	55	6.5	867	169	19.5	89	24	27.0	85	23	27.1
Marine Sciences(2)							205	38	18.5	39	7	17.9	27	2	7.4
Marine Sciences, Other(8)				68	8	11.8	96	16	16.7						
Physical Sciences, Other(2)							166	27	16.3	31	8	25.8	21	7	33.3

(1) In 1962 "Geological engineering" became "Applied geology, geological engineering, economic geology and petroleum engineering" and, in 1969 was spli "Applied geology, geological engineering and economic geology" and "Fuel technology and petroleum engineering." "Fuel technology and petroleum engin was discontinued in 1983 and "Applied geology, geological engineering and economic geology" was replaced by "Applied geology." (2) Introduced in 1983. (3) In 1983 "Environmental sciences" replaced "Environmental sciences, general" and "Environmental sciences, other." (4) "Minerology, petrology, and geochemistry" was split into "Geochemistry" and "Mineralogy, petrology" in 1969. (5) "Structural geology" was deleted in 1983 and "Geology" was introduced (6) "Geophysics" became "Geophysics, solid earth in 1976 and then "Geophysics and seismology in 1983. (7) Originally listed as "Hydrology." "Water resour added to title in 1977. (8) Introduced in 1977. Deleted in 1983. (9) Deleted in 1976 – restored in 1983. (10) "Earth science, general" and "Earth sciences, ot deleted in 1983 and "Geological sciences, general" and "Geological sciences, other" were introduced.

Source: Science and Engineering Doctorates, 1960–90, National Science Foundation and National Research Council

TABLE 6-32

EARTH, ATMOSPHERIC & MARINE SCIENCES PhDs BY SEX AND SUBFIELD, 1960 – 1991

	All Fields			Geology(1)			Atmospheric & Meterol Sci(2)			Oceanography & Marine Sci(3)			Geophysics & Seismology(4)			Other		
Year	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W
1960	253	3	1.2	8		0.0	23		0.0	6		0.0	26		0.0	190	3	1.6
1961	246	2	0.8	7		0.0	14		0.0	8		0.0	35		0.0	182	2	1.1
1962	249	5	2.0	17		0.0	17		0.0	14		0.0	19		0.0	182	5	2.7
1963	322	4	1.2	17		0.0	21		0.0	15		0.0	20		0.0	249	4	1.6
1964	310	5	1.6	15		0.0	32	1	3.1	18		0.0	26		0.0	219	4	1.8
1965	375	1	0.3	20		0.0	34		0.0	29		0.0	25		0.0	267	1	0.4
1966	404	12	3.0	28		0.0	34	1	2.9	39		0.0	32	1	3.1	271	10	3.7
1967	418	6	1.4	36	1	2.8	40	1	2.5	48	1	2.1	31		0.0	263	3	1.1
1968	442	11	2.5	19	1	5.3	47	1	2.1	49	1	2.0	34		0.0	293	8	2.7
1969	507	21	4.1	27	2	7.4	48		0.0	42	3	7.1	68	1	1.5	322	15	4.7
1970	510	16	3.1	12		0.0	55	3	5.5	66	2	3.0	67	1	1.5	310	10	3.2
1971	552	14	2.5	28	1	3.6	59	0	0.0	53	1	1.9	66	1	1.5	346	11	3.2
1972	604	22	3.6	24	1	4.2	78	2	2.6	78	1	1.3	78	3	3.8	346	15	4.3
1973	634	27	4.3	21	1	4.8	58	1	1.7	88	4	4.5	67	1	1.5	400	20	5.0
1974	629	35	5.6	15		0.0	57	2	3.5	81	8	9.9	80	4	5.0	396	21	5.3
1975	634	30	4.7	16	1	6.3	45	2	4.4	86	3	3.5	92	2	2.2	395	22	5.6
1976	645	63	9.8	22	1	4.5	76	8	10.5	89	14	15.7	73	4	5.5	385	36	9.4
1977	694	59	8.5	22	1	4.5	93	9	9.7	122	6	4.9	73	7	9.6	384	36	9.4
1978	623	61	9.8	28	4	14.3	77	3	3.9	126	14	11.1	60	6	10.0	332	34	10.2
1979	646	58	9.0	28	2	7.1	84	3	3.6	122	10	8.2	81	5	6.2	331	38	11.5
1980	628	64	10.2	20	1	5.0	90	8	8.9	110	15	13.6	71	2	2.8	337	38	11.3
1981	583	56	9.6	27	1	3.7	75	3	4.0	100	9	9.0	72	6	8.3	309	37	12.0
1982	657	103	15.7	25	6	24.0	65	4	6.2	133	23	17.3	81	6	7.4	353	64	18.1
1983	637	97	15.2	105	17	16.2	97	6	6.2	109	25	22.9	75	8	10.7	251	41	16.3
1984	614	106	17.3	124	22	17.7	81	8	9.9	99	27	27.3	68	7	10.3	242	42	17.4
1985	617	111	18.0	111	21	18.9	80	4	5.0	92	23	25.0	92	13	14.1	242	50	20.7
1986	589	100	17.0	118	23	19.5	78	8	10.3	100	11	11.0	89	18	20.2	204	40	19.6
1987	627	114	18.2	114	25	21.9	87	14	16.1	111	16	14.4	74	11	14.9	241	48	19.9
1988	729	144	19.8	143	36	25.2	106	11	10.4	110	26	23.6	83	8	9.6	287	63	22.0
1989	738	148	20.1	165	35	21.2	86	10	11.6	112	25	22.3	77	11	14.3	298	67	22.5
1990	769	149	19.4	167	32	19.2	83	14	16.9	128	31	24.2	91	15	16.5	300	57	19.0
1991	837	185	22.1	191	34	17.8	108	15	13.9	122	25	20.5	113	17	15.0	303	94	31.0
60–69	3526	70	2.0	194	4	2.1	310	4	1.3	268	5	1.9	316	2	0.6	2438	55	2.3
70–79	6171	385	6.2	216	12	5.6	682	33	4.8	911	63	6.9	737	34	4.6	3625	243	6.7
80–89	6419	1043	16.2	952	187	19.6	845	76	9.0	1076	200	18.6	782	90	11.5	2764	490	17.7
TOTAL	16953	1683	9.9	1553	237	15.3	1945	128	6.6	2377	293	12.3	1948	143	7.3	9130	882	9.7

(1)Structural Geology from 1960 thru 1982. (2) Included Meterology, deleted in 1976 & reinstated in 1983, Atmospheric and Meterological Sciences, Other, Atmospheric Dynamics and Atmospheric Physics & Chemistry each introduced in 1976 and Atmospheric & Meterological Sciences, General introduced in 1983. (3) Includes Marine Science, Other from 1977 thru 1982 and Marine Sciences from 1983. (4) Geophysics replaced by Geophysics & Seismology in 1976.

SOURCE: Earned Degrees Conferred Series, 1969–90, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 6-33

PhD DEGREES IN THE ENVIRONMENTAL SCIENCES BY SUBFIELD AND SEX, 1966 – 1990

	Total Envt Sci			Atmos Sci & Met				Geosciences				Oceanography			
Year	No.	Women	%W	No.	%ES	Wom	%W	No.	%ES	Wom	%W	No.	%ES	Wom	%W
1966	404	12	3.0	34	8.4	1	2.9	331	81.9	11	3.3	39	9.7	0	0.0
1967	415	6	1.4	40	9.6	1	2.5	327	78.8	4	1.2	48	11.6	1	2.1
1968	433	11	2.5	47	10.9	1	2.1	337	77.8	9	2.7	49	11.3	1	2.0
1969	496	20	4.0	48	9.7	0	0.0	406	81.9	17	4.2	42	8.5	3	7.1
1970	498	15	3.0	55	11.0	3	5.5	377	75.7	10	2.7	66	13.3	2	3.0
1971	536	13	2.4	59	11.0	0	0.0	424	79.1	12	2.8	53	9.9	1	1.9
1972	576	21	3.6	78	13.5	2	2.6	420	72.9	18	4.3	78	13.5	1	1.3
1973	569	22	3.9	58	10.2	1	1.7	423	74.3	17	4.0	88	15.5	4	4.5
1974	562	28	5.0	57	10.1	2	3.5	424	75.4	18	4.2	81	14.4	8	9.9
1975	548	22	4.0	45	8.2	2	4.4	417	76.1	17	4.1	86	15.7	3	3.5
1976	580	52	9.0	76	13.1	8	10.5	415	71.6	30	7.2	89	15.3	14	15.7
1977	635	52	8.2	93	14.6	9	9.7	420	66.1	37	8.8	122	19.2	6	4.9
1978	576	54	9.4	77	13.4	3	3.9	373	64.8	37	9.9	126	21.9	14	11.1
1979	589	51	8.7	84	14.3	3	3.6	383	65.0	38	9.9	122	20.7	10	8.2
1980	588	58	9.9	90	15.3	8	8.9	388	66.0	35	9.0	110	18.7	15	13.6
1981	529	45	8.5	75	14.2	3	4.0	354	66.9	33	9.3	100	18.9	9	9.0
1982	604	92	15.2	65	10.8	4	6.2	406	67.2	65	16.0	133	22.0	23	17.3
1983	574	84	14.6	97	16.9	6	6.2	368	64.1	53	14.4	109	19.0	25	22.9
1984	563	97	17.2	81	14.4	8	9.9	383	68.0	62	16.2	99	17.6	27	27.3
1985	557	102	18.3	80	14.4	4	5.0	385	69.1	75	19.5	92	16.5	23	25.0
1986	524	87	16.6	78	14.9	8	10.3	346	66.0	68	19.7	100	19.1	11	11.0
1987	573	106	18.5	87	15.2	14	16.1	375	65.4	76	20.3	111	19.4	16	14.4
1988	635	118	18.6	103	16.2	11	10.7	422	66.5	81	19.2	110	17.3	26	23.6
1989	514	102	19.8	67	13.0	7	10.4	358	69.6	70	19.6	89	17.3	25	28.1
1990	546	101	18.5	65	11.9	12	18.5	399	73.1	66	16.5	82	15.0	23	28.0
66–69	1,748	49	2.8	169	9.7	3	1.8	1,401	80.1	41	2.9	178	10.2	5	2.8
70–79	5,669	330	5.8	682	12.0	33	4.8	4,076	71.9	234	5.7	911	16.1	63	6.9
80–89	5,661	891	15.7	823	14.5	73	8.9	3,785	66.9	618	16.3	1,053	18.6	200	19.0
TOTAL	13,624	1,371	10.1	1,739	12.8	121	7.0	9,661	70.9	959	9.9	2,224	16.3	291	13.1

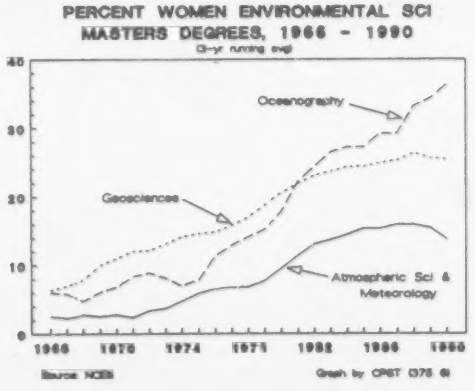
SOURCE: Earned Degrees Conferred Series, 1966–90, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 6-34

MASTERS DEGREES IN THE ENVIRONMENTAL SCIENCES BY SUBFIELD AND SEX
1966 – 1990

	Total Envt Sci			Atmos Sci & Met				Geosciences				Oceanography			
Year	No.	Women	%W	No.	%ES	Wom	%W	No.	%ES	Wom	%W	No.	%ES	Wom	%W
1966	759	45	5.9	97	12.8	2	2.1	594	78.3	37	6.2	68	9.0	6	8.8
1967	971	55	5.7	169	17.4	5	3.0	706	72.7	47	6.7	96	9.9	3	3.1
1968	1,008	71	7.0	112	11.1	2	1.8	787	78.1	63	8.0	109	10.8	6	5.5
1969	1,124	89	7.9	140	12.5	5	3.6	861	76.6	77	8.9	123	10.9	7	5.7
1970	1,124	125	11.1	134	11.9	3	2.2	847	75.4	112	13.2	143	12.7	10	7.0
1971	1,227	116	9.5	153	12.5	4	2.6	922	75.1	100	10.8	152	12.4	12	7.9
1972	1,408	152	10.8	168	11.9	4	2.4	1,067	75.8	130	12.2	173	12.3	18	10.4
1973	1,470	176	12.0	174	11.8	9	5.2	1,142	77.7	154	13.5	154	10.5	13	8.4
1974	1,679	197	11.7	195	11.6	7	3.6	1,285	76.5	179	13.9	199	11.9	11	5.5
1975	1,503	194	12.9	183	12.2	10	5.5	1,151	76.6	172	14.9	169	11.2	12	7.1
1976	1,581	220	13.9	197	12.5	17	8.6	1,232	77.9	186	15.1	152	9.6	17	11.2
1977	1,659	226	13.6	213	12.8	12	5.6	1,300	78.4	191	14.7	146	8.8	23	15.8
1978	1,832	290	15.8	199	10.9	12	6.0	1,456	79.5	257	17.7	177	9.7	21	11.9
1979	1,777	310	17.4	181	10.2	16	8.8	1,435	80.8	270	18.8	161	9.1	24	14.9
1980	1,793	336	18.7	170	9.5	14	8.2	1,481	82.6	295	19.9	142	7.9	27	19.0
1981	1,876	406	21.6	174	9.3	20	11.5	1,527	81.4	352	23.1	175	9.3	34	19.4
1982	2,012	452	22.5	164	8.2	24	14.6	1,682	83.6	381	22.7	166	8.3	47	28.3
1983	1,959	444	22.7	183	9.3	24	13.1	1,673	85.4	394	23.6	103	5.3	26	25.2
1984	1,982	465	23.5	246	12.4	33	13.4	1,617	81.6	401	24.8	119	6.0	31	26.1
1985	2,160	521	24.1	236	10.9	40	16.9	1,806	83.6	445	24.6	118	5.5	36	30.5
1986	2,234	517	23.1	204	9.1	32	15.7	1,895	84.8	451	23.8	135	6.0	34	25.2
1987	2,051	520	25.4	216	10.5	29	13.4	1,729	84.3	457	26.4	106	5.2	34	32.1
1988	1,920	487	25.4	191	9.9	36	18.8	1,630	84.9	421	25.8	99	5.2	30	30.3
1989	1,716	451	26.3	206	12.0	32	15.5	1,408	82.1	381	27.1	102	5.9	38	37.3
1990	1,487	343	23.1	198	13.3	24	12.1	1,207	81.2	290	24.0	82	5.5	29	35.4
66–69	3,862	260	6.7	518	13.4	14	2.7	2,948	76.3	224	7.6	396	10.3	22	5.6
70–79	15,260	2,006	13.1	1,797	11.8	94	5.2	11,837	77.6	1,751	14.8	1,626	10.7	161	9.9
80–89	19,703	4,599	23.3	1,990	10.1	284	14.3	16,448	83.5	3,978	24.2	1,265	6.4	337	26.6
TOTAL	40,312	7,208	17.9	4,503	11.2	416	9.2	32,440	80.5	6,243	19.2	3,369	8.4	549	16.3

CHART 6-7



SOURCE: Earned Degrees Conferred Series, 1969–90, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 6-35

BACHELORS DEGREES IN THE ENVIRONMENTAL SCIENCES BY SUBFIELD AND SEX, 1966 – 1990

	Total Envt Sci			Atmos Sci & Met				Geoscience				Oceanography			
Year	No.	Women	%W	No.	%ES	Wom	%W	No.	%ES	Wom	%W	No.	%ES	Wom	%W
1966	1,712	161	9.4	184	10.7	3	1.6	1,510	88.2	157	10.4	18	1.1	1	5.6
1967	1,936	197	10.2	212	11.0	4	1.9	1,685	87.0	191	11.3	39	2.0	2	5.1
1968	2,339	234	10.0	222	9.5	5	2.3	2,043	87.3	224	11.0	74	3.2	5	6.8
1969	2,924	291	10.0	228	7.8	13	5.7	2,583	88.3	273	10.6	113	3.9	5	4.4
1970	3,351	343	10.2	232	6.9	1	0.4	3,002	89.6	334	11.1	117	3.5	8	6.8
1971	3,562	383	10.8	249	7.0	4	1.6	3,085	86.6	373	12.1	228	6.4	6	2.6
1972	4,055	495	12.2	289	7.1	16	5.5	3,410	84.1	471	13.8	356	8.8	8	2.2
1973	4,374	532	12.2	251	5.7	9	3.6	3,831	87.6	504	13.2	292	6.7	19	6.5
1974	4,823	768	15.9	294	6.1	15	5.1	4,292	89.0	739	17.2	237	4.9	14	5.9
1975	4,877	827	17.0	306	6.3	21	6.9	4,318	88.5	788	18.2	253	5.2	18	7.1
1976	5,046	922	18.3	365	7.2	36	9.9	4,441	88.0	873	19.7	240	4.8	13	5.4
1977	5,653	1,174	20.8	373	6.6	35	9.4	4,998	88.4	1,102	22.0	282	5.0	37	13.1
1978	6,003	1,294	21.6	353	5.9	35	9.9	5,416	90.2	1,231	22.7	234	3.9	28	12.0
1979	6,082	1,387	22.8	326	5.4	37	11.3	5,467	89.9	1,314	24.0	289	4.8	36	12.5
1980	6,155	1,462	23.8	367	6.0	42	11.4	5,536	89.9	1,366	24.7	252	4.1	54	21.4
1981	6,694	1,666	24.9	359	5.4	57	15.9	6,110	91.3	1,560	25.5	225	3.4	49	21.8
1982	7,061	1,807	25.6	412	5.8	66	16.0	6,429	91.0	1,698	26.4	220	3.1	43	19.5
1983	7,298	1,848	25.3	396	5.4	66	16.7	6,774	92.8	1,767	26.1	128	1.8	15	11.7
1984	7,925	1,934	24.4	478	6.0	98	20.5	7,285	91.9	1,808	24.8	162	2.0	28	17.3
1985	7,576	1,861	24.6	414	5.5	68	16.4	7,001	92.4	1,757	25.1	161	2.1	36	22.4
1986	6,076	1,354	22.3	355	5.8	59	16.6	5,555	91.4	1,263	22.7	166	2.7	32	19.3
1987	4,689	1,060	22.6	345	7.4	61	17.7	4,189	89.3	971	23.2	155	3.3	28	18.1
1988	3,554	847	23.8	348	9.8	57	16.4	3,061	86.1	763	24.9	145	4.1	27	18.6
1989	2,723	656	24.1	330	12.1	52	15.8	2,249	82.6	567	25.2	144	5.3	37	25.7
1990	2,338	644	27.5	360	15.4	74	20.6	1,818	77.8	525	28.9	160	6.8	45	28.1
66–69	8,911	883	2.8	846	1.9	25	1.8	7,821	15.7	845	2.9	244	2.0	13	2.8
70–79	47,826	8,125	5.8	3,038	1.4	209	4.8	42,260	8.5	7,729	5.7	2,528	1.9	187	6.9
80–89	62,089	15,139	24.4	4,164	6.7	700	16.8	56,007	90.2	14,045	25.1	1,918	3.1	394	20.5
TOTAL	118,826	24,147	20.3	8,048	6.8	934	11.6	106,088	89.3	22,619	21.3	4,690	3.9	594	12.7

FIELD: Geosciences

SOURCE: Enrollment and Degree Surveys of the American Geological Institute

TABLE 6-36

GEOSCIENCE DEGREES AWARDED BY U.S. INSTITUTIONS BY LEVEL AND SEX, SELECTED YEARS, 1987–88 THRU 1990–91

FIELD	BA/BS			MA/MS			PhD			TOTAL		
and YEAR	Total	Women	% W	Total	Women	% W	Total	Women	% W	Total	Women	% W
ALL FIELDS												
1987–88	3088	774	25.1	1572	405	25.8	386	70	18.1	17700	5594	31.6
1989–90	2675	826	30.9	1377	331	24.0	551	108	19.6	4603	1265	27.5
1990–91	2568	773	30.1	1227	319	26.0	575	142	24.7	4370	1234	28.2
Geology												
1987–88	2018	481	34.2	999	246	29.1	188	40	24.8	11434	3386	29.6
1989–90	1750	523	29.9	884	219	24.8	302	57	18.9	2936	799	27.2
1990–91	1621	480	29.6	730	177	24.2	298	70	23.5	2649	727	27.4
Geophysics/Geophysical Engineering												
1987–88	183	58	32.3	206	42	3.8	71	8	22.5	676	155	22.9
1989–90	74	12	16.2	139	25	18.0	61	13	21.3	274	50	18.2
1990–91	76	21	27.6	110	17	15.5	79	14	17.7	265	52	19.6
Oceanography/Marine Science												
1987–88	179	32	44.6	127	47	28.2	47	6	23.0	2041	790	38.7
1989–90	158	70	44.3	123	35	28.5	85	18	21.2	366	123	33.6
1990–91	183	59	32.2	82	34	41.5	92	24	26.1	357	117	32.8
Geological Engineering												
1987–88	157	32	24.5	40	4	25.0	4	0	17.0	412	84	20.4
1989–90	69	13	18.8	23	2	8.7	6	1	16.7	98	16	16.3
1990–91	60	12	20.0	34	5	14.7	10	1	10.0	104	18	17.3
Geochemistry												
1987–88	5	1	14.3	27	6	75.0	17	3	18.2	22	6	27.3
1989–90	11	3	27.3	16	3	18.8	33	8	24.2	60	14	23.3
1990–91	8	3	37.5	18	4	22.2	41	14	34.1	67	21	31.3
Hydrology												
1987–88	17	3	31.3	48	13	20.0	5	1	22.0	93	23	24.7
1989–90	27	5	18.5	75	18	24.0	11	1	9.1	113	24	21.2
1990–91	35	9	25.7	107	28	26.2	12	5	41.7	154	42	27.3
Mineralogy												
1987–88	12	0	18.2	8	1	0.0	1	0	7.7	41	5	12.2
1989–90	9	0	0.0	15	4	26.7	8	0	0.0	32	4	12.5
1990–91	2	0	0.0	6	0	0.0	3	0	0.0	11	0	0.0
Paleontology												
1987–88	10	4	25.0	34	13	0.0	16	4	25.0	27	6	22.2
1989–90	11	3	27.3	13	2	15.4	22	5	22.7	46	10	21.7
1990–91	3	1	33.3	12	4	33.3	15	2	13.3	30	7	23.3
Soil Science												
1987–88	4	1	25.0	1	0	37.0	0	0	28.6	53	17	32.1
1989–90	10	1	10.0	1	0	0.0	0	0		11	1	9.1
1990–91	6	3	50.0	0	0		3	2	66.7	9	5	55.6
Environmental Sciences												
1987–88	143	50	36.7	37	16	36.8	19	4	39.0	721	271	37.6
1989–90	215	79	36.7	38	14	36.8	13	3	23.1	266	96	36.1
1990–91	247	76	30.8	72	31	43.1	14	4	28.6	333	111	33.3
Earth Sciences Teaching												
1987–88	109	38	42.3	8	4	46.6	0	0	37.8	743	312	42.0
1989–90	148	54	36.5	6	1	16.7	0	0		154	55	35.7
1990–91	129	59	45.7	31	16	51.6	5	5	100.0	165	80	48.5
Earth Science, General												
1987–88	251	74	42.6	37	13	33.1	18	4	29.1	1437	539	37.5
1989–90	193	63	32.6	44	8	18.2	10	2	20.0	247	73	29.6
1990–91	198	50	25.3	25	3	12.0	3	1	33.3	226	54	23.9

SOURCE: Science and Engineering Doctorates, National Science Foundation

TABLE 6-37

EARTH, ATMOSPHERIC & MARINE SCIENCES DOCTORATES BY RACE/ETHNICITY, 1975 – 1990
(U.S. Citizens and Non.U.S. Permanent Visa–Holders)

	All Races*				White		%	Black		Hispanic		Am. Indian		U Rep	Asian		
Year	Total	Men	Wom	%W	Men	Wom	Wh	Men	Wom	Men	Wom	Men	Wom	Min %	Men	Wom	%A
1975	530	500	30	5.7	453	24	90.0	0	1	4	0	0	0	0.9	19	0	3.6
1976	540	485	55	10.2	442	49	90.9	0	0	0	0	0	0	0.0	18	3	3.9
1977	581	530	51	8.8	471	47	89.2	2	0	12	0	0	0	2.4	18	3	3.6
1978	540	484	56	10.4	413	53	86.3	4	0	5	0	0	0	1.7	23	2	4.6
1979	566	514	52	9.2	455	47	88.7	3	0	6	0	2	0	1.9	21	0	3.7
1980	538	478	60	11.2	432	53	90.1	1	0	3	1	2	0	1.3	18	4	4.1
1981	488	440	48	9.8	402	46	91.8	4	0	6	0	0	0	2.0	12	2	2.9
1982	557	461	96	17.2	424	86	91.6	3	0	5	2	0	0	1.8	21	6	4.8
1983	513	425	88	17.2	379	74	88.3	1	0	11	0	2	0	2.7	18	8	5.1
1984	499	402	97	19.4	370	91	92.4	2	1	2	0	0	0	1.0	17	2	3.8
1985	474	382	92	19.4	343	87	90.7	4	0	5	1	1	0	2.3	20	1	4.4
1986	446	365	81	18.2	335	78	92.6	1	0	4	1	1	1	1.8	13	1	3.1
1987	449	359	90	20.0	322	85	90.6	1	1	4	1	0	0	1.6	15	3	4.0
1988	542	422	120	22.1	392	108	92.3	3	0	4	4	1	1	2.4	11	4	2.8
1989	557	437	120	21.5	397	110	91.0	3	1	6	3	4	2	3.4	19	4	4.1
1990	535	418	117	21.9	393	109	93.8	0	2	9	4	0	1	3.0	16	1	3.2
Totals	8,355	7,102	1,253	15.0	6,423	1,147	90.6	32	6	86	17	13	5	1.9	279	44	3.9

* The data for 'All races' include recipients whose race/ethnicity is unknown.

Source: American Geological Institute

TABLE 6-38

MINORITY ENROLLMENTS IN THE GEOSCIENCES, FALL 1987 – 1990

	Black			Hispanic			Native American			Asian/Pacific Islander		
Fall	Total	Women	%Wom	Total	Women	%Wom	Total	Women	%Wom	Total	Women	%Wom
Undergraduate												
1987	269	86	32	615	224	36	94	23	24	180	75	42
1989	222	83	37	229	74	32	33	16	48	123	57	46
1990	324	141	44	410	180	44	37	10	27	150	70	47
Graduate												
1987	70	27	39	107	23	21	36	10	28	208	33	16
1989	51	15	29	75	31	41	12	3	25	94	21	22
1990	61	17	28	94	32	34	20	8	40	98	29	30

GEOSCIENCE DEGREES TO MINORITIES, 1988 – 1991

	Black			Hispanic			Native American			Asian/Pacific Islander		
	Total	Women	%Wom	Total	Women	%Wom	Total	Women	%Wom	Total	Women	%Wom
Associate												
1988												
1990	3	2	67	10	8	80	1	0	0	0	0	
1991	23	8	35	5	2	40	1	0	0	3	1	33
Bachelors												
1988	21	5	24	22	4	18	31	7	23	19	5	26
1990	50	15	30	33	7	21	8	4	50	22	9	41
1991	46	20	43	26	9	35	4	2	50	25	15	60
Masters												
1988	15	4	27	13	4	31	6	1	17	16	5	31
1990	7	2	29	10	4	40	0	0		11	1	9
1991	7	2	29	12	5	42	1	1	100	8	1	13
PhDs												
1988	4	1	25	6	3	50	5	3	60	18	2	11
1990	2	1	50	1	0	0	0	0		2	0	0
1991	4	2	50	4	2	50	1	0		6	3	50

FIELD: Geosciences

SOURCE: Enrollment and Degree Surveys of the American Geological Institute

TABLE 6-39

ENROLLMENT IN GEOSCIENCE DEPARTMENTS BY EDUCATIONAL LEVEL, FIELD AND SEX, SELECTED YEARS, 1980–81 THRU 1990–91

DEPARTMENT and YEAR	Freshmen and Soph			Juniors			Seniors			Undergraduates			Masters			Doctorates		
	Total	Wome	% W	Total	Wome	% W	Total	Wome	% W	Total	Wome	% W	Total	Wome	% W	Total	Wome	% W
ALL FIELDS																		
1980–81	11752	2811	23.9	9454	2336	24.7	10738	2652	24.7	31944	7799	24.4	7370	1794	24.3	2810	530	18.9
1982–83	13146	2994	22.8	10845	2662	24.5	12901	3176	24.6	36892	8832	23.9	7511	1869	24.9	2897	621	21.4
1985–86*	7966	2124	26.7	6615	1705	25.8	10522	2629	25.0	25102	6459	25.7	9017	2323	25.8	4296	1012	23.6
1987–88*	6321	2295	36.3	3293	923	28.0	5008	1208	24.1	14626	4425	30.3	6209	1580	25.4	3454	750	21.7
1988–89*	6532	1742	26.7	5424	1398	25.8	8626	2156	25.0	20584	5296	25.7	7394	1905	25.8	3523	830	23.6
1990–91	6968	2536	36.4	4230	1447	34.2	4773	1572	32.9	15971	5555	34.8	4687	1413	30.1	3343	776	23.2
Geology																		
1980–81	9113	2114	23.2	7511	1817	24.2	8423	2059	24.4	25047	5990	23.9	4883	1164	23.8	1257	245	19.5
1982–83	9943	2263	22.8	8574	2122	24.7	10210	2557	25.0	28727	6942	24.2	5007	1270	25.4	1150	250	21.7
1985–86	4662	1249	26.8	4513	1141	25.3	7441	1863	25.0	16617	4254	25.6	6104	1590	26.0	2004	499	24.9
1987–88	4555	1560	34.2	2781	810	29.1	4096	1016	24.8	11434	3386	29.6	4786	1225	25.6	2156	480	22.3
1988–89	3766	1248	33.1	2194	727	33.1	3120	920	29.5	9080	2895	31.9	3267	834	25.5	1809	412	22.8
1990–91	4216	1526	36.2	2498	843	33.7	3116	986	31.6	9830	3355	34.1	2547	700	27.5	1629	369	22.7
Geophysics/Geophys. Engin.																		
1980–81	386	85	22.0	339	77	22.7	383	67	17.5	1108	229	20.7	626	101	16.1	367	52	14.2
1982–83	600	134	22.3	435	84	19.3	487	107	22.0	1522	325	21.4	586	103	17.6	439	67	15.3
1985–86	276	68	24.8	224	41	18.5	613	152	24.9	1113	262	23.5	673	143	21.2	599	107	17.9
1987–88	251	81	32.3	119	5	3.8	306	69	22.5	676	155	22.9	614	102	16.6	579	96	16.6
1988–89	147	38	25.9	101	25	24.8	166	33	19.9	414	96	23.2	553	86	15.6	588	93	15.8
1990–91	155	48	31.0	121	28	23.1	105	41	39.0	381	117	30.7	431	86	20.0	551	94	17.1
Oceanography/Marine Science																		
1980–81	453	87	19.2	188	40	21.3	240	56	23.3	881	183	20.8	781	227	29.1	681	142	20.9
1982–83	507	110	21.7	227	49	21.6	226	43	19.0	960	202	21.0	781	216	27.7	677	169	25.0
1985–86	511	105	20.5	216	49	22.6	249	51	20.8	976	205	21.0	789	280	35.5	917	243	26.5
1987–88	1413	630	44.6	293	83	28.2	336	78	23.0	2041	790	38.7	615	224	36.4	636	168	26.3
1988–89	973	590	60.6	201	64	31.8	245	77	31.4	1419	731	51.5	341	118	34.6	655	179	27.3
1990–91	893	371	41.5	300	123	41.0	256	98	38.3	1449	592	40.9	515	218	42.3	545	158	29.0
Geological Engineering																		
1980–81	621	144	23.2	336	67	19.9	426	72	16.9	1383	283	20.5	128	22	17.2	36	0	0.0
1982–83	1040	203	19.5	656	104	15.9	856	120	14.0	2552	427	16.7	292	46	15.8	95	7	7.4
1985–86	400	83	20.7	365	63	17.4	773	139	18.0	1538	285	18.6	279	27	9.6	67	1	1.9
1987–88	94	23	24.5	88	22	25.0	230	39	17.0	412	84	20.4	169	25	14.8	69	6	8.7
1988–89	197	46	23.4	105	22	21.0	214	40	18.7	516	108	20.9	222	36	16.2	127	14	11.0
1990–91	184	43	23.4	129	42	32.6	176	54	30.7	489	139	28.4	140	36	25.7	54	9	16.7
Geochemistry																		
1980–81	17	1	5.9	17	0	0.0	25	9	36.0	59	10	16.9	226	67	29.6	180	33	18.3
1982–83	7	0	0.0	14	3	21.4	18	3	16.7	39	6	15.4	124	42	33.9	169	42	24.9
1985–86	39	10	25.0	30	15	48.0	37	10	26.7	106	34	32.2	213	65	30.3	212	66	31.0
1987–88	7	1	14.3	4	3	75.0	11	2	18.2	22	6	27.3	112	35	31.3	153	48	31.4
1988–89	10	4	40.0	6	2	33.3	7	0	0.0	23	6	26.1	88	23	26.1	177	56	31.6
1990–91	14	5	35.7	8	4	50.0	8	2	25.0	30	11	36.7	78	25	32.1	156	49	31.4

SOURCE: Enrollment and Degree Surveys of the American Geological Institute

TABLE 6-39 (continued)

ENROLLMENT IN GEOSCIENCE DEPARTMENTS BY EDUCATIONAL LEVEL, FIELD AND SEX, SELECTED YEARS 1980–81 – 1990–91

DEPARTMENT and YEAR	Freshmen & Soph			Juniors			Seniors			Undergraduates			Masters			Doctorates		
	Total	Women	% W	Total	Women	% W	Total	Women	% W	Total	Women	% W	Total	Women	% W	Total	Women	% W
Hydrology																		
1980–81	20	3	15.0	31	5	16.1	42	8	19.0	93	16	17.2	195	42	21.5	38	6	15.8
1982–83	24	5	20.8	44	14	31.8	42	6	14.3	110	25	22.7	194	41	21.1	59	14	23.7
1985–86	29	6	20.8	43	7	17.1	62	17	27.5	134	30	22.7	418	100	23.9	90	15	16.2
1987–88	32	10	31.3	20	4	20.0	41	9	22.0	93	23	24.7	323	77	23.8	63	16	25.4
1988–89	27	4	14.8	31	8	25.8	78	21	26.9	136	33	24.3	439	108	24.6	89	18	20.2
1990–91	74	19	25.7	75	21	28.0	83	31	37.3	232	71	30.6	398	124	31.2	112	24	21.4
Mineralogy																		
1980–81	4	0	0.0	4	1	25.0	4	0	0.0	12	1	8.3	55	17	30.9	36	6	16.7
1982–83	66	8	12.1	64	6	9.4	93	15	16.1	223	29	13.0	100	21	21.0	68	16	23.5
1985–86	39	4	9.4	16	5	30.8	11	5	44.4	66	13	20.4	20	9	43.8	33	10	29.8
1987–88	22	4	18.2	6	0	0.0	13	1	7.7	41	5	12.2	24	8	33.3	34	13	38.2
1988–89	13	4	30.8	7	1	14.3	10	2	20.0	30	7	23.3	16	7	43.8	21	7	33.3
1990–91	37	9	24.3	14	4	28.6	17	4	23.5	68	17	25.0	21	3	14.3	36	6	16.7
Paleontology																		
1980–81	8	1	12.5	13	5	38.5	8	1	12.5	29	7	24.1	120	43	35.8	96	22	22.9
1982–83	9	2	22.2	22	5	22.7	13	4	30.8	44	11	25.0	87	26	29.9	83	24	28.9
1985–86	12	5	40.0	16	4	23.1	22	9	38.9	50	17	34.1	106	32	29.9	109	26	23.6
1987–88	12	3	25.0	3	0	0.0	12	3	25.0	27	6	22.2	72	32	44.4	124	35	28.2
1988–89	8	4	50.0	7	3	42.9	17	7	41.2	32	14	43.8	54	18	33.3	99	20	20.2
1990–91	16	6	37.5	10	3	30.0	6	1	16.7	32	10	31.3	43	21	48.8	74	16	21.6
Soil Science																		
1980–81	8	1	12.5	41	20	48.8	53	23	43.4	102	44	43.1	8	3	37.5	2	1	50.0
1982–83	9	2	22.2	11	3	27.3	10	2	20.0	30	7	23.3	0	0		1	0	0.0
1985–86	28	4	13.0	17	4	21.4	27	6	22.7	72	13	18.6				0	0	
1987–88	12	3	25.0	27	10	37.0	14	4	28.6	53	17	32.1	3	0	0.0	0	0	ERR
1988–89	13	5	38.5	15	7	46.7	16	6	37.5	44	18	40.9	17	7	41.2	24	6	25.0
1990–91	30	6	20.0	16	8	50.0	12	7	58.3	58	21	36.2	5	2	40.0	15	5	33.3
Environmental Sciences																		
1980–81	425	180	42.4	373	124	33.2	451	118	26.2	1249	422	33.8	125	42	33.6	36	11	30.6
1982–83	205	70	34.1	237	91	38.4	262	104	39.7	704	265	37.6	134	60	44.8	56	14	25.0
1985–86	893	239	26.8	423	139	32.9	449	152	34.0	1765	530	30.1	128	49	38.1	46	16	34.2
1987–88	221	81	36.7	231	85	36.8	269	105	39.0	721	271	37.6	125	58	46.4	87	19	21.8
1988–89	410	176	42.9	261	106	40.6	199	68	34.2	870	350	40.2	145	65	44.8	37	8	21.6
1990–91	605	210	34.7	494	161	32.6	413	143	34.6	1512	514	34.0	295	111	37.6	89	23	25.8
Earth Sciences Teaching																		
1980–81	84	29	34.5	140	63	45.0	148	63	42.6	372	155	41.7	77	28	36.4	2	0	0.0
1982–83	83	39	47.0	102	49	48.0	142	77	54.2	327	165	50.5	54	21	38.9	2	1	50.0
1985–86	221	83	37.6	188	63	33.8	187	60	32.0	595	206	34.6	77	26	33.3	5	0	0.0
1987–88	265	112	42.3	219	102	46.6	259	98	37.8	743	312	42.0	101	41	40.6	11	4	36.4
1988–89	332	144	43.4	304	189	62.2	333	168	50.5	969	501	51.7	55	21	38.2	8	4	50.0
1990–91	277	125	45.1	233	109	46.8	278	135	48.6	788	369	46.8	66	39	59.1	27	7	25.9
Earth Science, General																		
1980–81	613	166	27.1	461	117	25.4	535	176	32.9	1609	459	28.5	148	39	26.0	79	12	15.2
1982–83	653	158	24.2	459	132	28.8	542	138	25.5	1654	426	25.9	152	23	15.1	98	17	17.3
1985–86	856	270	31.5	563	173	30.7	651	165	25.3	2071	607	29.3	210	43	20.3	215	43	19.9
1987–88	814	347	42.6	272	90	33.1	351	102	29.1	1437	539	37.5	80	21	26.3	47	16	34.0
1988–89	2705	1364	50.4	269	86	32.0	324	80	24.7	3298	1530	46.4	135	27	20.0	49	16	32.7
1990–91	467	168	36.0	332	101	30.4	303	70	23.1	1102	339	30.8	148	48	32.4	55	16	29.1

FIELD: Mathematics, Computer Sciences and Statistics

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 6-40

PhD AWARDS IN MATHEMATICS AND COMPUTER/INFORMATION SCIENCE BY SUBFIELD AND SEX, 1960 – 1991

Year	MATH & COMP SCI	MATH TOTAL	App-lied Math	Alge-bra	Analysis & Funct Anal(1)	Geom-etry	Logic	Numbe Theory	Proba-bility & Math Stat(3)	Topol-ogy	Comput-ing Theory & Pract	Opera-tions Re-search(2)	Math General	Math Other	COMP/ INFO SCI	Compu-ter Sci-ences(4)	Info Sci & Sys-tems(5)
TOTAL																	
1960–69	6407	6407	831	949	1616	215	183	181	894	790	255		276	217			
1970–79	11240	10877	1181	1330	1901	302	293	270	1469	975	1345	246	999	566	363	363	
1980–85	10405	8532	795	424	607	237	165	162	1111	313	95	204	578	278	1873	1690	183
1986	1129	730	136	46	81	38	23	20	141	34	10	29	125	47	399	355	44
1987	1190	740	131	57	86	30	18	15	143	41	14	22	137	46	450	384	66
1988	1263	749	142	54	76	44	19	26	152	27	12	29	135	33	514	442	72
1989	1473	861	158	50	101	47	12	23	167	37	12	22	181	51	612	519	93
1990	1596	892	185	39	90	42	19	26	157	50	12	29	191	52	704	612	92
1991	1837	1040	192	72	132	66	23	30	206	57	19	16	182	45	797	719	78
WOMEN																	
1960–69	363	363	26	88	84	14	12	23	44	30	5		19	18			
1970–79	1130	1086	67	209	158	35	31	32	179	85	99	19	116	56	44	44	
1980–85	949	743	118	74	72	21	14	20	209	50	7	32	70	56	206	164	42
1986	170	121	20	18	11	1	3	1	27	6	0	4	20	10	49	40	9
1987	190	125	29	10	6	3	2	2	36	3	4	1	22	7	65	51	14
1988	177	121	17	10	15	4	2	5	31	3	3	3	20	8	56	39	17
1989	263	156	28	10	20	7	5	5	38	8	1	4	18	12	107	69	38
1990	268	158	34	6	15	8	3	1	31	11	1	2	32	14	110	85	25
1991	310	194	27	16	21	5	1	8	56	18	3	4	26	9	116	96	20
%WOMEN																	
1960–69	5.7	5.7	3.1	9.3	5.2	6.5	6.6	12.7	4.9	3.8	2.0		6.9	8.3			
1970–79	10.1	10.0	5.7	15.7	8.3	11.6	10.6	11.9	12.2	8.7	7.4	7.7	11.6	9.9	12.1	12.1	
1980–85	9.1	8.7	14.8	17.5	11.9	8.9	8.5	12.3	18.8	16.0	7.4	15.7	12.1	20.1	11.0	9.7	23.0
1986	15.1	16.6	14.7	39.1	13.6	2.6	13.0	5.0	19.1	17.6	0.0	13.8	16.0	21.3	12.3	11.3	20.5
1987	16.0	16.9	22.1	17.5	7.0	10.0	11.1	13.3	25.2	7.3	28.6	4.5	16.1	15.2	14.4	13.3	21.2
1988	14.0	16.2	12.0	18.5	19.7	9.1	10.5	19.2	20.4	11.1	25.0	10.3	14.8	24.2	10.9	8.8	23.6
1989	17.9	18.1	17.7	20.0	19.8	14.9	41.7	21.7	22.8	21.6	8.3	18.2	9.9	23.5	17.5	13.3	40.9
1990	16.8	17.7	18.4	15.4	16.7	19.0	15.8	3.8	19.7	22.0	8.3	6.9	16.8	26.9	15.6	13.9	27.2
1990	16.9	18.7	14.1	22.2	15.9	7.6	4.3	26.7	27.2	31.6	15.8	25.0	14.3	20.0	14.6	13.4	25.6

(1) "Anaylisis" before 1968. (2) Introduced in 1973. (3) "Math statistics" removed from the name of this subfield in 1969, but restored in 1972. (4) Introduced in 1977. (5) Introduced i

SOURCE: 1990 Annual AMS–MAA Survey, First Report, The American Mathematical Society Notices, November 1991

TABLE 6-41

MATHEMATICAL SCIENCES* PhDs BY CITIZENSHIP AND SEX, 1973 THRU 1991

YEAR	Total#	Foreign	%F	U.S. CITIZENS				
				Total U.S.	%	MEN	WOMEN	% W
1973	986	212	21.5	774	78.5	696	78	10.1
1974	938	261	27.8	677	72.2	618	59	8.7
1975	999	258	25.8	741	74.2	658	83	11.2
1976	965	243	25.2	722	74.8	636	86	11.9
1977	901	212	23.5	689	76.5	602	87	12.6
1978	868	234	27.0	634	73.0	545	89	14.0
1979	806	210	26.1	596	73.9	503	93	15.6
1980	791	213	26.9	578	73.1	491	87	15.1
1981	839	272	32.4	567	67.6	465	102	18.0
1982	798	279	35.0	519	65.0	431	88	17.0
1983	744	289	38.8	455	61.2	366	89	19.6
1984	738	305	41.3	433	58.7	346	87	20.1
1985	726	330	45.5	396	54.5	315	81	20.5
1986	755	369	48.9	386	51.1	304	82	21.2
1987	739	377	51.0	362	49.0	289	73	20.2
1988	798	435	54.5	363	45.5	287	76	20.9
1989	884	473	53.5	411	46.5	313	98	23.8
1990	929	528	56.8	401	43.2	312	89	22.2
1991	1074	613	57.1	461	42.9	349	112	24.3
Total	16278	6113	37.6	10165	62.4	8526	1639	16.1

* Does not include Computer Science degrees.

\# Includes only those whose citizenship is known.

Source: Notices, Nov. 1991, American Mathematical Society

TABLE 6-42

MATHEMATICS PhDs FROM U.S. INSTITUTIONS BY SEX, RACE/ETHNICITY & CITIZENSHIP JULY 1990 – JUNE 1991

		Men		Women		Percent	
	Total	U.S. Cit.	Total	U.S. Cit.	Total	U.S. Cit.	Wo-men
Total	1074	349	854	112	220	42.9	20.5
Asian	409	17	330	14	79	7.6	19.3
Black	16	7	12	3	4	62.5	25.0
Indian	2	1	1	1	1	100.0	50.0
Hispanic	41	2	30	4	11	14.6	26.8
White	552	299	433	85	119	69.6	21.6
Unknown	54	23	48	5	6	51.9	11.1

FIELD: Mathematical Sciences

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 6-43

MATHEMATICAL AND COMPUTER SCIENCES PhD AWARDS BY CITIZENSHIP AND VISA TYPE, 1960 – 1991

YEAR	U.S.			FOREIGN						Citizen-ship Unknown
				Total		Immigrant		Temporary		
	TOTAL	No.	%	No.	%	No.	%	No.	%	
1960	291	233	80.1	55	18.9	11	3.8	44	15.1	3
1961	332	272	81.9	51	15.4	7	2.1	44	13.3	9
1962	388	312	80.4	72	18.6	7	1.8	65	16.8	4
1963	483	401	83.0	72	14.9	11	2.3	61	12.6	10
1964	588	489	83.2	89	15.1	9	1.5	80	13.6	10
1965	685	578	84.4	92	13.4	16	2.3	76	11.1	15
1966	769	634	82.4	119	15.5	22	2.9	97	12.6	16
1967	830	692	83.4	119	14.3	27	3.3	92	11.1	19
1978	970	798	82.3	154	15.9	42	4.3	112	11.5	18
1969	1,065	887	83.3	163	15.3	49	4.6	114	10.7	15
1970	1,224	1,018	83.2	191	15.6	57	4.7	134	10.9	15
1971	1,238	1,012	81.7	214	17.3	62	5.0	152	12.3	12
1972	1,281	1,030	80.4	234	18.3	65	5.1	169	13.2	17
1973	1,232	951	77.2	254	20.6	81	6.6	173	14.0	27
1874	1,208	873	72.3	295	24.4	71	5.9	224	18.5	40
1975	1,147	848	73.9	272	23.7	75	6.5	197	17.2	27
1976	1,003	748	74.6	238	23.7	55	5.5	183	18.2	17
1977	959	710	74.0	224	23.4	54	5.6	170	17.7	25
1978	959	704	73.4	233	24.3	52	5.4	181	18.9	22
1979	980	715	73.0	244	24.9	63	6.4	181	18.5	21
1980	962	676	70.3	257	26.7	75	7.8	182	18.9	29
1981	952	640	67.2	289	30.4	63	6.6	226	23.7	23
1982	934	601	64.3	304	32.5	53	5.7	251	26.9	29
1983	980	591	60.3	354	36.1	73	7.4	281	28.7	35
1984	974	585	60.1	374	38.4	53	5.4	321	33.0	15
1985	990	565	57.1	393	39.7	66	6.7	327	33.0	32
1986	1,101	568	51.6	478	43.4	83	7.5	395	35.9	55
1987	1,158	588	50.8	527	45.5	83	7.2	444	38.3	43
1988	1,254	626	49.9	567	45.2	86	6.9	481	38.4	61
1989	1,473	822	55.8	617	41.9	95	6.4	522	35.4	34
1990	1,596	812	50.9	765	47.9	89	5.6	676	42.4	19
1991	1,837	818	44.5	935	50.9	117	6.4	818	44.5	84
TOTAL	31,843	21,797	68.5	9,245	29.0	1,772	5.6	7,473	23.5	801

SOURCE: Science and Engineering Doctorates, National Science Foundation

TABLE 6-44

MATHEMATICS DOCTORATES BY RACE/ETHNICITY, 1975 – 1990

(U.S. Citizens and Non.U.S. Permanent Visa–Holders)

	All Races*				White		%	Black		Hispanic		Am. Indian		U Rep	Asian		
Year	Total	Men	Wom	%W	Men	Wom	Wh	Men	Wom	Men	Wom	Men	Wom	Min %	Men	Wom	%A
1975	923	833	90	9.8	716	80	86.2	9	2	7	1	3	0	2.4	57	5	6.7
1976	803	708	95	11.8	613	85	86.9	5	0	9	0	0	0	1.7	42	7	6.1
1977	744	648	96	12.9	567	82	87.2	10	0	7	3	1	0	2.8	34	8	5.6
1978	666	570	96	14.4	483	80	84.5	11	2	5	0	0	1	2.9	33	10	6.5
1979	603	504	99	16.4	420	85	83.7	11	0	7	3	0	0	3.5	39	7	7.6
1980	582	496	86	14.8	423	73	85.2	7	5	5	0	0	0	2.9	36	6	7.2
1981	525	439	86	16.4	376	72	85.3	8	1	4	1	1	0	2.9	30	10	7.6
1982	499	419	80	16.0	371	66	87.6	4	2	5	1	1	0	2.6	25	7	6.4
1983	457	371	86	18.8	319	76	86.4	2	1	5	2	0	0	2.2	28	6	7.4
1984	443	357	86	19.4	308	72	85.8	3	1	10	1	3	0	4.1	20	10	6.8
1985	418	336	82	19.6	280	70	83.7	7	0	7	5	0	0	4.5	27	6	7.9
1986	402	329	73	18.2	282	61	85.3	3	3	9	3	0	1	4.7	23	5	7.0
1987	396	319	77	19.4	258	61	80.6	9	2	9	2	0	0	5.6	30	11	10.4
1988	386	316	70	18.1	273	59	86.0	4	0	4	0	2	0	2.6	22	11	8.5
1989	428	327	101	23.6	281	88	86.2	5	3	7	4	0	0	4.4	21	3	5.6
1990	412	317	95	23.1	289	83	90.3	3	1	6	4	1	0	3.6	18	7	6.1
Totals	8,667	7,289	1,398	16.1	6,259	1,193	85.8	101	23	106	30	12	2	3.2	485	119	7.0

* The data for 'All races' include recipients whose race/ethnicity is unknown.

Q8-35, 2-10-92

SOURCE: Earned Degrees Conferred Series, 1977-90, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 6-45

COMPUTER/INFORMATION SCIENCES DOCTORATES BY RACE/ETHNICITY, 1975 – 1990

(U.S. Citizens and Non.U.S. Permanent Visa–Holders)

	All Races*				White		%	Black		Hispanic		Am. Indian		U Rep	Asian		
Year	Total	Men	Wom	%W	Men	Wom	Wh	Men	Wom	Men	Wom	Men	Wom	Min %	Men	Wom	%A
1977	25	21	4	16.0	18	4	88.0	0	0	0	0	0	0	0.0	0	0	0.0
1978	90	83	7	7.8	71	6	85.6	0	0	0	0	0	0	0.0	4	0	4.4
1979	175	148	27	15.4	130	23	87.4	1	0	2	0	1	0	2.3	7	2	5.1
1980	169	149	20	11.8	126	17	84.6	0	0	1	0	0	0	0.6	9	0	5.3
1981	188	164	24	12.8	141	21	86.2	1	1	0	0	0	0	1.1	14	2	8.5
1982	155	138	17	11.0	119	17	87.7	1	0	1	0	1	0	1.9	12	0	7.7
1983	207	177	30	14.5	150	24	84.1	1	2	0	0	1	0	1.9	16	4	9.7
1984	195	168	27	13.8	139	24	83.6	2	1	3	0	0	0	3.1	18	2	10.3
1985	213	189	24	11.3	156	21	83.1	3	0	4	2	0	0	4.2	17	0	8.0
1986	249	206	43	17.3	153	40	77.5	1	0	7	0	0	0	3.2	34	3	14.9
1987	275	221	54	19.6	184	45	83.3	1	1	4	0	2	1	3.3	20	6	9.5
1988	325	279	46	14.2	225	40	81.5	2	0	2	0	0	0	1.2	38	6	13.5
1989	392	310	82	20.9	251	66	80.9	0	1	1	3	0	0	1.3	42	10	13.3
1990	387	299	88	22.7	255	79	86.3	1	0	4	2	0	0	1.8	39	7	11.9
Totals	3,045	2,552	493	16.2	2,118	427	83.6	14	6	29	7	5	1	2.0	270	42	10.2

* The data for 'All races' include recipients whose race/ethnicity is unknown.

Note: 'Computer Sciences' introduced in 1977, 'Information Sciences' added in 1983.

SOURCE: Earned Degrees Conferred, 1971–1990, National Center for EJucation Statistics

TABLE 6-46

MATHEMATICAL AND COMPUTER SCIENCES PhDs BY SEX AND SUBFIELD, 1950 – 1990

	Math and Computer Sciences				Mathematical/Computer Sciences Fields									
					Mathematics					Computer/Information Sciences				
Year	Total	Men	Wom	%W	No.	%Math	Men	Wom	%W	No.	%CS	Men	Wom	%W
1950	160	151	9	5.6	160	100	151	9	5.6					
1951	184	175	9	4.9	184	100	175	9	4.9					
1952	206	195	11	5.3	206	100	195	11	5.3					
1953	241	227	14	5.8	241	100	227	14	5.8					
1954	227	213	14	6.2	227	100	213	14	6.2					
1955	250	239	11	4.4	250	100	239	11	4.4					
1956	235	225	10	4.3	235	100	225	10	4.3					
1957	249	236	13	5.2	249	100	236	13	5.2					
1958	247	232	15	6.1	247	100	232	15	6.1					
1959	282	267	15	5.3	282	100	267	15	5.3					
1960	303	285	18	5.9	303	100	285	18	5.9					
1961	344	327	17	4.9	344	100	327	17	4.9					
1962	396	372	24	6.1	396	100	372	24	6.1					
1963	490	454	36	7.3	490	100	454	36	7.3					
1964	596	567	29	4.9	596	100	567	29	4.9					
1965	688	628	60	8.7	682	99	623	59	8.7	6	1	5	1	16.7
1966	801	744	57	7.1	782	98	725	57	7.3	19	2	19	0	0.0
1967	870	810	60	6.9	832	96	773	59	7.1	38	4	37	1	2.6
1968	983	931	52	5.3	947	96	895	52	5.5	36	4	36	0	0.0
1969	1,161	1,091	70	6.0	1,097	94	1029	68	6.2	64	6	62	2	3.1
1970	1,343	1,245	98	7.3	1,236	92	1140	96	7.8	107	8	105	2	1.9
1971	1,327	1,231	96	7.2	1,199	90	1106	93	7.8	128	10	125	3	2.3
1972	1,295	1,194	101	7.8	1,128	87	1039	89	7.9	167	13	155	12	7.2
1973	1,264	1,147	117	9.3	1,068	84	966	102	9.6	196	16	181	15	7.7
1974	1,229	1,120	109	8.9	1,031	84	931	100	9.7	198	16	189	9	4.5
1975	1,188	1,064	124	10.4	975	82	865	110	11.3	213	18	199	14	6.6
1976	1,100	983	117	10.6	856	78	762	94	11.0	244	22	221	23	9.4
1977	1,039	911	128	12.3	823	79	714	109	13.2	216	21	197	19	8.8
1978	1,001	862	139	13.9	805	80	681	124	15.4	196	20	181	15	7.7
1979	966	814	152	15.7	730	76	608	122	16.7	236	24	206	30	12.7
1980	964	837	127	13.2	724	75	624	100	13.8	240	25	213	27	11.3
1981	980	841	139	14.2	728	74	614	114	15.7	252	26	227	25	9.9
1982	932	817	115	12.3	681	73	587	94	13.8	251	27	230	21	8.4
1983	960	810	150	15.6	698	73	582	116	16.6	262	27	228	34	13.0
1984	946	794	152	16.1	695	73	569	126	18.1	251	27	225	26	10.4
1985	947	813	134	14.1	699	74	590	109	15.6	248	26	223	25	10.1
1986	1,086	917	169	15.6	742	68	618	124	16.7	344	32	299	45	13.1
1987	1,099	921	178	16.2	725	66	599	126	17.4	374	34	322	52	13.9
1988	1,180	1,006	174	14.7	752	64	626	126	16.8	428	36	380	48	11.2
1989	1,420	1,168	252	17.7	882	62	711	171	19.4	538	38	457	81	15.1
1990	1,538	1,279	259	16.8	915	59	746	169	18.5	623	41	533	90	14.4
50–59	2,281	2,160	121	5.3	2,281	100	2,160	121	5.3					
60–69	6,632	6,209	423	6.4	6,469	98	6,050	419	6.5	163	2	159	4	2.5
70–79	11,752	10,571	1,181	10.0	9,851	84	8,812	1,039	10.5	1,901	16	1,759	142	7.5
80–89	10,514	8,924	1,590	15.1	7,326	70	6,120	1,206	16.5	3,188	338	2,804	384	12.0
TOTAL	32,717	29,143	3,574	10.9	26,842	82	23,888	2,954	11.0	5,875	18	5,255	620	10.6

FIELD: Mathematical and Computer Sciences

SOURCE: Earned Degrees Conferred Series, 1950–90, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 6-47

MASTERS DEGREES IN THE MATHEMATICAL AND COMPUTER SCIENCES BY SUBFIELD AND SEX, 1950 – 1990

	TOTAL Math/Comp Sciences				Mathematics					Comp Computer Sciences				
Year	No.	Men	Women	%W	No.	%Matl	Men	Women	%W	No.	%CS	Men	Women	%W
1950	974	784	190	19.5	974	100	784	190	19.5					
1951	1109	929	180	16.2	1109	100	929	180	16.2					
1952	802	663	139	17.3	802	100	663	139	17.3					
1953	677	565	112	16.5	677	100	565	112	16.5					
1954	706	579	127	18.0	706	100	579	127	18.0					
1955	761	613	148	19.4	761	100	613	148	19.4					
1956	898	719	179	19.9	898	100	719	179	19.9					
1957	965	777	188	19.5	965	100	777	188	19.5					
1958	1234	994	240	19.4	1234	100	994	240	19.4					
1959	1499	1188	311	20.7	1499	100	1188	311	20.7					
1960	1765	1428	337	19.1	1765	100	1428	337	19.1					
1961	2238	1772	466	20.8	2238	100	1772	466	20.8					
1962	2680	2179	501	18.7	2680	100	2179	501	18.7					
1963	3323	2665	658	19.8	3323	100	2665	658	19.8					
1964	3603	2914	689	19.1	3603	100	2914	689	19.1					
1965	4294	3482	812	18.9	4148	97	3342	806	19.4	146	3	140	6	4.1
1966	5010	3992	1018	20.3	4772	95	3771	1001	21.0	238	5	221	17	7.1
1967	5733	4423	1310	22.9	5284	92	4000	1284	24.3	449	8	423	26	5.8
1968	6081	4720	1361	22.4	5533	91	4202	1331	24.1	548	9	518	30	5.5
1969	6735	5169	1566	23.3	5723	85	4230	1493	26.1	1012	15	939	73	7.2
1970	7107	5298	1809	25.5	5648	79	3974	1674	29.6	1459	21	1324	135	9.3
1971	6789	5101	1688	24.9	5201	77	3677	1524	29.3	1588	23	1424	164	10.3
1972	7186	5409	1777	24.7	5209	72	3657	1552	29.8	1977	28	1752	225	11.4
1973	7146	5416	1730	24.2	5033	70	3528	1505	29.9	2113	30	1888	225	10.6
1974	7116	5323	1793	25.2	4840	68	3340	1500	31.0	2276	32	1983	293	12.9
1975	6637	4871	1766	26.6	4338	65	2910	1428	32.9	2299	35	1961	338	14.7
1976	6466	4776	1690	26.1	3863	60	2550	1313	34.0	2603	40	2226	377	14.5
1977	6496	4730	1766	27.2	3698	57	2398	1300	35.2	2798	43	2332	466	16.7
1978	6421	4704	1717	26.7	3383	53	2233	1150	34.0	3038	47	2471	567	18.7
1979	6101	4469	1632	26.7	3046	50	1989	1057	34.7	3055	50	2480	575	18.8
1980	6515	4715	1800	27.6	2868	44	1832	1036	36.1	3647	56	2883	764	20.9
1981	6787	4939	1848	27.2	2,569	38	1,692	877	34.1	4218	62	3247	971	23.0
1982	7666	5446	2220	29.0	2,731	36	1,821	910	33.2	4935	64	3625	1310	26.5
1983	8160	5672	2488	30.5	2,839	35	1,859	980	34.5	5321	65	3813	1508	28.3
1984	8939	6174	2765	30.9	2,749	31	1,795	954	34.7	6190	69	4379	1811	29.3
1985	9989	6941	3048	30.5	2,888	29	1,877	1,011	35.0	7101	71	5064	2037	28.7
1986	11241	7713	3528	31.4	3,171	28	2,055	1,116	35.2	8070	72	5658	2412	29.9
1987	11808	8011	3797	32.2	3,327	28	2,026	1,301	39.1	8481	72	5985	2496	29.4
1988	12600	8759	3841	30.5	3,434	27	2,057	1,377	40.1	9166	73	6702	2464	26.9
1989	12816	8827	3989	31.1	3,424	27	2,058	1,366	39.9	9392	73	6769	2623	27.9
1990	13320	9173	4147	31.1	3,677	28	2,205	1,472	40.0	9643	72	6968	2675	27.7
50–59	9,625	7,811	1,814	18.8	9,625	100	7,811	1,814	18.8					
60–69	41,462	32,744	8,718	21.0	39,069	94	30,503	8,566	21.9	2,393	6	2,241	152	6.4
70–79	67,465	50,097	17,368	25.7	44,259	66	30,256	14,003	31.6	23,206	34	19,841	3,365	14.5
80–89	96,521	67,197	29,324	30.5	30,000	31	19,072	10,928	36.8	76,164	69	48,125	18,396	27.7
TOTAL	228,393	167,022	61,371	26.9	126,630	55	89,847	36,783	29.0	101,763	45	77,175	24,588	24.2

FIELD: Mathematical and Computer Sciences

SOURCE: Earned Degrees Conferred Series, 1950–90, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 6-48

BACHELORS DEGREES IN THE MATHEMATICAL AND COMPUTER SCIENCES BY SUBFIELD AND SEX, 1950 – 1990

					Mathematics					Computer Sciences				
Year	No.	Men	Women	%W	No.	%Math	Men	Women	%W	No.	%CS	Men	Women	%W
1950	6392	4946	1446	22.6	6392	100	4946	1446	22.6					
1951	5753	4311	1442	25.1	5753	100	4311	1442	25.1					
1952	4721	3389	1332	28.2	4721	100	3389	1332	28.2					
1953	4396	3122	1274	29.0	4396	100	3122	1274	29.0					
1954	4090	2722	1368	33.4	4090	100	2722	1368	33.4					
1955	4034	2724	1310	32.5	4034	100	2724	1310	32.5					
1956	4660	3137	1523	32.7	4660	100	3137	1523	32.7					
1957	5546	3826	1720	31.0	5546	100	3826	1720	31.0					
1958	6924	4953	1971	28.5	6924	100	4953	1971	28.5					
1959	9019	6504	2515	27.9	9019	100	6504	2515	27.9					
1960	11437	8312	3125	27.3	11437	100	8312	3125	27.3					
1961	13127	9483	3644	27.8	13127	100	9483	3644	27.8					
1962	14610	10355	4255	29.1	14610	100	10355	4255	29.1					
1963	16121	11163	4958	30.8	16121	100	11163	4958	30.8					
1964	18677	12682	5995	32.1	18677	100	12682	5995	32.1					
1965	19668	13215	6453	32.8	19581	100	13132	6449	32.9	87	0.4	83	4	4.6
1966	20182	13480	6702	33.2	20093	100	13404	6689	33.3	89	0.4	76	13	7.7
1967	21530	14196	7334	34.1	21308	99	13998	7310	34.3	222	1.0	198	24	10.8
1968	24084	15243	8841	36.7	23625	98	14839	8786	37.2	459	1.9	404	55	12.0
1969	28263	17915	10348	36.6	27330	97	17103	10227	37.4	933	3.3	812	121	13.0
1970	29109	18593	10516	36.1	27565	95	17248	10317	37.4	1544	5.3	1345	199	12.9
1971	27306	17488	9818	36.0	24918	91	15424	9494	38.1	2388	8.7	2064	324	13.6
1972	27250	17466	9784	35.9	23848	88	14525	9323	39.1	3402	12.5	2941	461	13.6
1973	27528	17543	9985	36.3	23223	84	13878	9345	40.2	4305	15.6	3665	640	14.9
1974	26570	16851	9719	36.6	21813	82	12874	8939	41.0	4757	17.9	3977	780	16.4
1975	23385	14729	8656	37.0	18346	78	10646	7700	42.0	5039	21.5	4083	956	19.0
1976	21749	14071	7678	35.3	16085	74	9531	6554	40.7	5664	26.0	4540	1124	19.8
1977	20729	13241	7488	36.1	14303	69	8354	5949	41.6	6426	31.0	4887	1539	23.9
1978	19925	12815	7110	35.7	12701	64	7455	5246	41.3	7224	36.3	5360	1864	25.8
1979	20670	13249	7421	35.9	11901	58	6943	4958	41.7	8769	42.4	6306	2463	28.1
1980	22686	14439	8247	36.4	11473	51	6625	4848	42.3	11213	49.4	7814	3399	30.3
1981	26406	16,672	9734	36.9	11173	42	6,392	4,781	42.8	15,233	57.7	10,280	4,953	32.5
1982	32139	19,966	12173	37.9	11708	36	6,650	5,058	43.2	20,431	63.6	13,316	7,115	34.8
1983	37239	22,749	14490	38.9	12557	34	7,059	5,498	43.8	24,682	66.3	15,690	8,992	36.3
1984	45777	27,797	17980	39.3	13342	29	7,428	5,914	44.3	32,435	70.9	20,369	12,066	37.1
1985	54388	32,921	21467	39.5	15267	28	8,231	7,036	46.1	39,121	72.0	24,690	14,431	36.8
1986	58583	35,841	22742	38.8	16388	28	8,772	7,616	46.5	42,195	72.0	27,069	15,126	35.7
1987	56442	34,871	21571	38.2	16515	29	8,833	7,682	46.5	39,927	70.7	26,038	13,889	34.8
1988	50877	32,112	18765	36.9	15981	31	8,569	7,412	46.4	34,896	68.6	23,543	11,353	32.5
1989	45874	29,442	16432	35.8	15237	33	8,221	7,016	46.0	30,637	66.8	21,221	9,416	30.7
1989	42031	26,990	15041	35.8	14597	35	7,812	6,785	46.5	27434	65.3	19,178	8,256	30.1
50–59	55,535	39,634	15,901	28.6	55,535	100	39,634	15,901	28.6					
60–69	187,699	126,044	61,655	32.8	185,909	99	124,471	61,438	33.0	1,790	1.0	1,573	217	12.1
70–79	244,221	156,046	88,175	36.1	194,703	80	116,878	77,825	40.0	49,518	20.3	39,166	10,350	20.9
80–89	430,411	266,810	163,601	38.0	139,641	32	76,780	62,861	45.0	290,770	67.6	190,030	100,740	34.6
TOTAL	959,897	615,524	344,373	35.9	590,385	62	365,575	224,810	38.1	369,512	38.5	249,949	119,563	32.4

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 6-49

MATHEMATICS PhDs BY SEX AND RACE/ETHNICITY, 1985 – 1991

(U.S. Citizens Only)

					White		Black		Hispanic		Indian		Asian		
Year	Total	Men	Wom	%Wom	Men	Women	Men	Wom	Men	Wom	Men	Wom	Men	Wom	%Min
1985	376	306	70	18.6	272	65	3	0	5	2	0	0	12	2	6.4
1986	366	297	69	18.9	266	60	2	3	6	3	0	1	12	2	7.9
1987	345	280	65	18.8	238	57	8	2	7	2	0	0	14	4	10.7
1988	342	283	59	17.3	253	55	2	0	3	0	2	0	13	4	7.0
1989	393	300	93	23.7	268	83	4	2	4	4	0	0	12	1	6.9
1990	375	293	82	21.9	272	74	3	1	4	3	1	0	8	3	6.1
1991	439	351	88	20.0	318	76	5	4	3	3	0	0	18	5	8.7

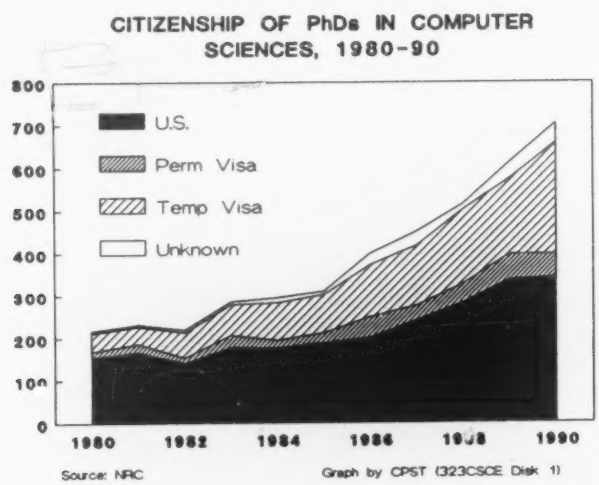
TABLE 6-50

COMPUTER SCIENCES PhDs BY SEX AND RACE/ETHNICITY, 1985 – 1991

(U.S. Citizens Only)

					White		Black		Hispanic		Indian		Asian		
Year	Total	Men	Wom	%Wom	Men	Women	Men	Wom	Men	Wom	Men	Wom	Men	Wom	%Min
1985	189	165	24	12.7	149	21	2	0	3	2	0	0	2	0	4.8
1986	202	165	37	18.3	139	37	0	0	4	0	0	0	12	0	7.9
1987	243	193	50	20.6	172	43	1	1	4	0	2	1	6	4	7.8
1988	284	245	39	13.7	215	38	1	0	2	0	1	0	19	1	8.5
1989	338	266	72	21.3	235	61	0	1	1	3	1	1	14	4	7.4
1990	348	268	80	23.0	248	77	1	0	3	1	0	0	9	1	4.3
1991	379	298	81	21.4	255	68	1	4	9	1	1	0	25	7	12.7

CHART 6-8



Source: The 1989–90 Taulbee Survey, The Computing Research Association

TABLE 6-51

SEX, MINORITY STATUS, AND CITIZENSHIP OF COMPUTER SCIENCE Ph.D.s, 1970 – 1990

Year	Total	Women		Black		Hispanic		Foreign	
		No.	%	No.	%	No.	%	No.	%
1970	112	1	0.9	1	0.9			22	19.6
1971	124	4	3.2	1	0.8			21	16.9
1972	206	12	5.8	2	1.0			39	18.9
1973	208	7	3.4	2	1.0			41	19.7
1974	203	6	3.0	2	1.0			46	22.7
1975	256	21	8.2	1	0.4			68	26.6
1976	246	14	5.7	0	0.0			57	23.2
1977	208	14	6.7	0	0.0			68	32.7
1978	223	19	8.5	2	0.9			51	22.9
1979	248	24	9.7	1	0.4			65	26.2
1980	230	28	12.2	0	0.0			82	35.7
1981	235	26	11.1	0	0.0			79	33.6
1982	244	27	11.1	1	0.4			83	34.0
1983	256	31	12.1	2	0.8			86	33.6
1984	274	29	10.6	3	1.1			87	31.8
1985	326	32	9.8	3	0.9	7	2.1	122	37.4
1986	412	50	12.1	6	1.5	6	1.5	184	44.7
1987	466	51	10.9	1	0.2	8	1.7	181	38.8
1988	577	60	10.4	4	0.7	5	0.9	238	41.2
1989	625	87	13.9	0	0.0	6	1.0	248	39.7
1990	734	97	13.2	3	0.4	8	1.1	331	45.1
Totals	5,058	575	11.4	26	0.5	40	0.8	1,905	37.7

Source: The 1989–90 Taulbee Survey, The Computing Research Association

TABLE 6-52

WOMEN AND MINORITIES ON COMPUTER SCIENCE AND COMPUTER ENGINEERING FACULTIES, 1990–91

Year	Total	Women	%	Blacks	%	Hispanics	%
CS Assistant Prof.	979	96	9.8	9	0.9	13	1.3
Associate Prof.	783	80	10.2	3	0.4	8	1.0
Full Prof.	940	37	3.9	3	0.3	7	0.7
Total	2,702	213	7.9	15	0.6	28	1.0
CE Assistant Prof.	231	17	7.4	3	1.3	3	1.3
Associate Prof.	204	9	4.4	1	0.5	2	1.0
Full Prof.	342	4	1.2	1	0.3	2	0.6
Total	777	30	3.9	5	0.6	7	0.9

FIELD: Statistics

SOURCE: Earned Degrees Conferred, 1955–1990, National Center for Education Statistics

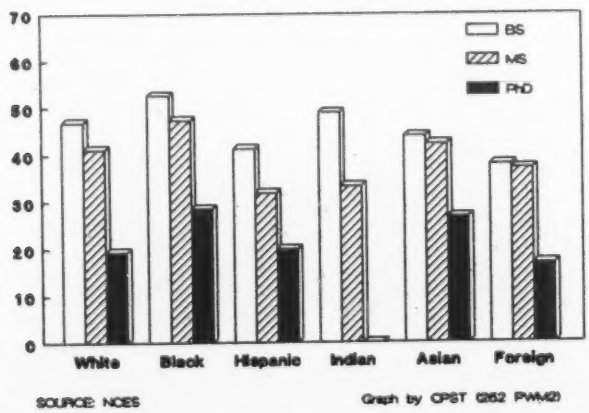
TABLE 6-53

STATISTICS DEGREES BY SEX AND LEVEL OF DEGREE, 1955–56 to 1989–90

YEAR	BACHELORS Total	Women	%Wom	MASTERS Total	Women	%Wom	DOCTORATES Total	Women	%Wom
1955–56 thru 1959–60	344	78	22.7	506	56	11.1	170	6	3.5
1960–61 thru 1969–70	2355	377	16.0	3507	513	14.6	965	71	7.4
1970–71	217	55	25.3	495	99	20.0	185	12	6.5
1971–72	168	47	28.0	416	85	20.4	173	12	6.9
1972–73	198	69	34.8	402	91	22.6	156	17	10.9
1973–74	257	94	36.6	453	108	23.8	147	10	6.8
1974–75	213	68	31.9	449	109	24.3	158	16	10.1
1975–76	258	92	35.7	471	111	23.6	141	16	11.3
1976–77	290	126	43.4	473	130	27.5	142	23	16.2
1977–78	273	107	39.2	507	134	26.4	153	32	20.9
1978–79	214	82	38.3	532	152	28.6	142	30	21.1
1979–80	247	104	42.1	495	133	26.9	115	24	20.9
1980–81	226	95	42.0	467	144	30.8	144	22	15.3
1981–82	258	106	41.1	478	145	30.3	125	25	20.0
1982–83	273	133	48.7	459	166	36.2	128	17	13.3
1983–84	298	131	44.0	471	153	32.5	149	23	15.4
1984–85	371	151	40.7	490	165	33.7	137	25	18.2
1985–86	438	195	44.5	478	180	37.7	146	26	17.8
1986–87	463	197	42.5	577	234	40.6	115	30	26.1
1987–88	437	195	44.6	577	240	41.6	140	29	20.7
1988–89	425	179	42.1	640	285	44.5	170	45	26.5
1989–90	457	195	42.7	671	289	43.1	189	45	23.8
TOTALS	8,680	2,876	33.1	14,014	3,722	26.6	4,090	556	13.6

CHART 6-9

PERCENT WOMEN AMONG MATH GRADUATES, 1990



Source: "Vital Statistics in the Mathematical Sciences...: Fall 1988,", Notices of the American Mathematical Society, May/June 1989 and May/June 1991

TABLE 6-54

EMPLOYMENT OF NEW PhDs IN MATHEMATICAL SCIENCES BY TYPE OF EMPLOYER, CITIZENSHIP AND SEX, 1988 – 1991

Year	Academic U.S.											Other U.S.				Foreign						
	Sub Total	University Group						MA/MS Inst	BA/BS Inst.	2yr Coll or HS	Other Academ	Sub Total	Research Inst	Govern-ment	Bus/ Ind	Sub Total	Canada	Other Foreign	Not Seeking	Not Yet Empl.	Un-known	TOTAL
		Total	I	II	III	IV	V															
Total																						
'87–88	480	227	87	42	53	34	11	77	71	7	78	128	18	15	95	223	46	177	6	11	28	856
'88–89	484	241	100	47	48	32	14	79	103	8	63	127	24	17	86	198	32	166	8	60	72	859
'89–90	563	272	104	51	67	32	18	84	107	10	90	154	32	19	103	190	53	137	17	19	48	991
'90–91	531	247	100	37	54	39	17	79	125	18	62	173	33	24	116	167	53	114	13	125	133	1142
% of Total																						
'87–88	53.7	26.5	10.2	4.9	6.2	4.0	1.3	9.0	8.3	0.8	9.1	15.0	2.1	1.8	11.1	26.1	5.4	20.7	0.7	1.3	3.3	100
'88–89	51.5	25.1	10.4	4.9	5.0	3.3	1.5	8.2	10.7	0.8	6.6	13.2	2.5	1.8	9.0	20.6	3.3	17.3	0.8	6.3	7.5	100
'89–90	56.8	27.4	10.5	5.1	6.8	3.2	1.8	8.5	10.8	1.0	9.1	15.5	3.2	1.9	10.4	19.2	5.3	13.8	1.7	1.9	4.8	100
'90–91	46.5	21.6	8.8	3.2	4.7	3.4	1.5	6.9	10.9	1.6	5.4	15.1	2.9	2.1	10.2	14.6	4.6	10.0	1.1	10.9	11.6	100
Women																						
'87–88	81	35	11	11	4	9	0	14	14	5	13	27	3	3	21	37	8	29	2	1	5	153
'88–89	110	39	9	10	7	9	4	19	36	4	12	22	2	3	17	24	4	20	1	14	8	179
'89–90	110	47	12	8	13	10	4	16	19	4	24	25	3	2	20	26	11	15	10	4	8	183
'90–91	117	44	15	9	8	9	3	15	37	3	18	35	5	4	26	25	4	21	2	22	26	227
% of Women																						
'87–88	52.9	22.9	7.2	7.2	2.6	5.9	0.0	9.2	9.2	3.3	8.5	17.6	2.0	2.0	13.7	24.2	5.2	19.0	1.3	0.7	3.3	100
'88–89	61.5	21.8	5.0	5.6	3.9	5.0	2.2	10.6	20.1	2.2	6.7	12.3	1.1	1.7	9.5	13.4	2.2	11.2	0.6	7.8	4.5	100
'89–90	60.1	25.7	6.6	4.4	7.1	5.5	2.2	8.7	10.4	2.2	13.1	13.7	1.6	1.1	10.9	14.2	6.0	8.2	5.5	2.2	4.4	100
'90–91	51.5	19.4	6.6	4.0	3.5	4.0	1.3	6.6	16.3	1.3	7.9	15.4	2.2	1.8	11.5	11.0	1.8	9.3	0.9	9.7	11.5	100
Women as % of Total																						
'87–88	17.6	15.4	12.6	26.2	7.5	26.5	0.0	18.2	19.7	71.4	16.7	21.1	16.7	20.0	22.1	16.6	17.4	16.4	33.3	9.1	17.9	17.9
'88–89	22.3	16.2	9.0	21.3	14.6	28.1	28.6	24.1	35.0	50.0	19.0	17.3	8.3	17.6	19.8	12.1	12.5	12.0	12.5	23.3	11.1	18.7
'89–90	19.5	17.3	11.5	15.7	19.4	31.3	22.2	19.0	17.8	40.0	26.7	16.2	9.4	10.5	19.4	13.7	20.8	10.9	58.8	21.1	16.7	18.5
'90–91	22.0	17.8	15.0	24.3	14.8	23.1	17.6	19.0	29.6	16.7	29.0	20.2	15.2	16.7	22.4	15.0	7.5	16.4	15.4	17.6	19.5	19.9

Source: 1990 Annual AMS–MAA Survey

TABLE 6-55

PERCENTAGE OF WOMEN AMONG FULL–TIME MATHEMATICS FACULTY, FALL 1990

	GROUPS								
	I	II	III	I+II+III	IV	V	M	B	VI
% of all doctoral faculty	6.0	6.5	8.8	7.1	13.3	7.9	13.8	17.2	6.3
% of all full–time faculty	6.6	9.3	13.3	9.8	14.1	7.7	21.6	24.6	6.4
% of tenured doctoral faculty	4.5	5.1	5.7	5.1	6.3	7.7	10.4	13.3	3.7
% of tenure–track doctoral faculty	10.2	11.4	17.0	14.0	29.5	6.7	20.9	24.3	19.1
% of non tenure–eligible doctoral faculty	11.6	14.6	13.0	12.3	24.4	13.3	27.7	26.2	13.8
% of non tenure–eligible faculty	15.5	50.0	48.0	33.7	27.1	11.8	55.7	44.7	14.0

Source: Office of Personnal Management – unpublished tabulations

TABLE 6-56

FEDERAL WORKERS EMPLOYED IN ACCOUNTING, MATHEMATICS, STATISTICS AND COMPUTER SPECIALITIES BY OCCUPATION TITLE, SEX AND MINORITY STATUS, SEPTEMBER 30, 1991

	ALL EMPLOYEES			TOTAL MINORITY				BLACK		HISPANIC		ASIAN		AM. INDIAN		WHITE	
OCCUPATIONAL TITLE	TOTAL	WOMEN	% W	TOTAL	%	WOMEN	% W	No.	% B	No.	% H	No.	% A	No.	% I	No.	% W
Accounting	13,138	5,440	41.4	3,473	26.4	1,972	56.8	2,255	17.2	467	3.6	581	4.4	170	1.3	9665	73.6
Auditing	15,584	4,753	30.5	2,406	15.4	1,030	42.8	1,434	9.2	425	2.7	498	3.2	49	0.3	13178	84.6
Actuary	181	28	15.5	19	10.5	4	21.1	9	5.0	4	2.2	6	3.3	0	0.0	162	89.5
Operations Research	4,096	894	21.8	474	11.6	154	32.5	218	5.3	100	2.4	136	3.3	20	0.5	3622	88.4
Mathematics	2,481	702	28.3	353	14.2	132	37.4	166	6.7	75	3.0	100	4.0	12	0.5	2128	85.8
Mathematical Statistican	1,349	442	32.8	263	19.5	115	43.7	88	6.5	21	1.6	152	11.3	2	0.1	1086	80.5
Statistcian	2,957	1,118	37.8	523	17.7	289	55.3	333	11.3	67	2.3	110	3.7	13	0.4	2434	82.3
Computer Science	3,083	981	31.8	481	15.6	215	44.7	176	5.7	54	1.8	242	7.8	9	0.3	2602	84.4
TOTALS	42,869	14,358	33.5	7,992	18.6	3,911	48.9	4,679	10.9	1,213	2.8	1,825	4.3	275	0.6	34,877	81.4

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 7-1

PhD AWARDS IN ENGINEERING BY SUBFIELD AND SEX, 1960 – 1991

	Year of Doctorate																	
	1960–69			1970–79			1980–88			1989			1990			1991		
Fields	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W
TOTAL	19070	77	0.4	30338	426	1.4	4190	286	6.8	4536	373	8.2	4892	414	8.5	5212	452	8.7
Aerospace/Aeronaut/Astro(1)	948	6	0.6	1460	16	1.1	1147	36	6.0	177	8	4.5	192	4	2.1	207	7	3.4
Agricultural	283			546	2	0.4	628	20	4.3	102	6	5.9	101	7	6.9	84	8	9.5
Bioengineering & Biomed(2)	37			698	13	1.9	729	93	15.8	115	26	22.6	129	23	17.8	149	27	18.1
Ceramic	296	3	1.0	297	8	2.7	252	19	10.0	35	4	11.4	43	11	25.6	58	10	17.2
Chemical	2969	17	0.6	3555	52	1.5	4106	328	9.6	624	74	11.9	560	70	12.5	620	72	11.6
Civil	1924	7	0.4	3078	34	1.1	3571	152	5.1	498	45	9.0	505	40	7.9	509	30	5.9
Communications(3)							169	7	12.5	25	1	4.0	34	2	5.9	21	2	9.5
Computer(4)				496	32	6.4	693	47	7.1	117	12	10.3	132	12	9.1	178	9	5.1
Electrical, Electronics(5)							4567	176	3.9	993	54	5.4	1110	70	6.3	1206	66	5.5
Electrical(5)	3941	11	0.3	5777	60	1.0	1359	44	3.2									
Electronics(5)	937	3	0.3	966	10	1.0	230	3	1.3									
Engineering Mechanics	1501	7	0.5	1557	15	1.0	920	38	4.1	109	7	6.4	111	9	8.1	113	7	6.2
Engineering Physics(6)	780	2	0.3	267	5	1.9	129	5	3.9	16		0.0	16	1	6.3	23	2	8.7
Engineering Science(3)							208	7	3.4	27	3	11.1	37	6	16.2	42	2	4.8
Environmental Health Eng(7)	365	2	0.5	667	13	1.9	484	33	6.8	42	10	23.8	48	10	20.8	64	9	14.1
Industrial	454	4	0.9	959	21	2.2	924	99	10.7	161	18	11.2	151	25	16.6	163	17	10.4
Materials Science	22	0	0.0	1047	30	2.9	1781	193	10.8	257	34	13.2	306	30	9.8	362	56	15.5
Mechanical	2291	2	0.1	3409	25	0.7	4001	131	3.3	648	22	3.4	771	30	3.9	761	50	6.6
Metallurgical(8)	1442	7	0.5	1393	13	0.9	945	58	6.1	87	6	6.9	91	7	7.7	70	8	11.4
Mining & Mineral(9)	10			81			155	6	3.9	33	4	12.1	40	3	7.5	38	6	15.8
Naval Arch, Marine Eng(3)							50	0	0.0	9	1	11.1	8	1	12.5	5	0	0.0
Nuclear (6)	120			1125	18	1.6	1066	43	4.0	86	7	8.1	115	9	7.8	107	4	3.7
Ocean (3)							132	1	0.8	20	2	10.0	17	2	11.8	21	1	4.8
Operations Research				693	20	2.9	552	60	10.9	67	13	19.4	46	6	13.0	76	22	28.9
Petroleum (10)				117	3	2.6	240	5	2.1	29	1	3.4	49		0.0	28	1	3.6
Polymer (3)							230	29	12.6	58	5	8.6	47	7	14.9	42	7	16.7
Systems Eng (11)				357	7	2.0	524	33	6.3	31	3	9.7	51	3	5.9	48	4	8.3
Engineering, General	124	1	0.8	384	4	1.0	377	23	6.1	64	2	3.1	75	8	10.7	78	6	7.7
Engineering, Other	626	5	0.8	1407	25	1.8	790	48	6.1	106	5	4.7	107	18	16.8	139	19	13.7

(1) Originally "Aeronautical engineering", "Astronautical" added in 1966 and "Aerospace" added in 1983. "Biomedical introduced in 1969. "Bioengineering" added in 1983. (3) Introduced in 1983. (4) Introduced in 1975. (5) These two subfields were merged in 1983. (6) In 1961 "Nuclear engineering" was dropped and previous cases added to "Engineering physics." In 1969 "Nuclear engineering" was reinstated. (7) Called "Sanitary and environmental" before 1983. (8) Originally "Metallurgy and metallurgical engineering", the term Physical" was introduced in 1967 and changed to "metallurgical: in 1983. (9) "Mining engineering" dropped in 1961, and renamed "Mining and mineral" in 1983. (10) "Fuel technology and petroleum engineering" introduced in 1973, renamed "Petroleum" in 1983. (11) Introduced as "Systems design and system science in 1975, renamed "Systems" in 1983.

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

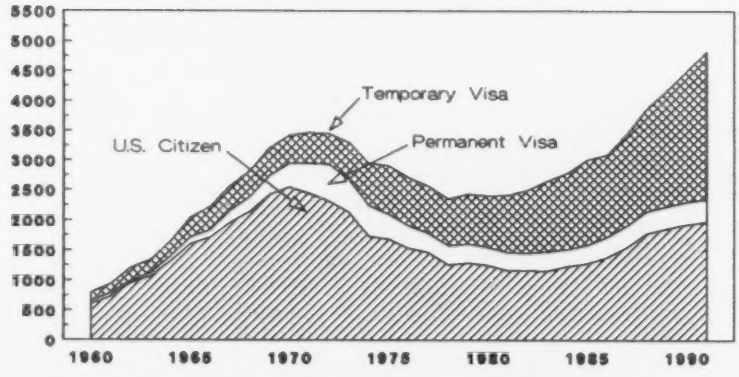
TABLE 7-2

ENGINEERING PhD AWARDS BY CITIZENSHIP AND VISA TYPE, 1960 – 1991

YEAR	TOTAL	U.S.		FOREIGN						Citizen-ship Unknown
				Total		Immigrant		Non-Imm.		
		No.	%	No.	%	No.	%	No.	%	
1960	794	607	76.4	183	23.0	54	6.8	129	16.2	4
1961	940	732	77.9	202	21.5	48	5.1	154	16.4	6
1962	1,216	949	78.0	259	21.3	41	3.4	218	17.9	8
1963	1,357	1,062	78.3	280	20.6	65	4.8	215	15.8	15
1964	1,664	1,313	78.9	331	19.9	84	5.0	247	14.8	20
1965	2,074	1,603	77.3	430	20.7	111	5.4	319	15.4	41
1966	2,301	1,718	74.7	501	21.8	116	5.0	385	16.7	82
1967	2,604	1,957	75.2	607	23.3	198	7.6	409	15.7	40
1978	2,848	2,134	74.9	680	23.9	244	8.6	436	15.3	34
1969	3,251	2,416	74.3	780	24.0	320	9.8	460	14.1	55
1970	3,433	2,542	74.0	872	25.4	401	11.7	471	13.7	19
1971	3,500	2,436	69.6	1,032	29.5	513	14.7	519	14.8	32
1972	3,476	2,307	66.4	1,137	32.7	619	17.8	518	14.9	32
1973	3,339	2,126	63.7	1,170	35.0	552	16.5	618	18.5	43
1874	3,121	1,735	55.6	1,208	38.7	507	16.2	701	22.5	178
1975	2,961	1,685	56.9	1,223	41.3	413	13.9	810	27.4	53
1976	2,791	1,532	54.9	1,183	42.4	384	13.8	799	28.6	76
1977	2,641	1,468	55.6	1,098	41.6	325	12.3	773	29.3	75
1978	2,423	1,259	52.0	1,092	45.1	325	13.4	767	31.7	72
1979	2,494	1,294	51.9	1,138	45.6	323	12.9	816	32.7	62
1980	2,479	1,255	50.6	1,150	46.3	299	12.0	851	34.3	74
1981	2,528	1,170	46.2	1,243	49.1	301	11.8	942	37.3	115
1982	2,646	1,169	44.1	1,326	50.1	296	11.2	1,030	38.9	151
1983	2,781	1,163	41.5	1,489	53.5	319	11.5	1,170	42.1	129
1984	2,913	1,239	42.5	1,543	52.9	274	9.4	1,269	43.5	131
1985	3,166	1,279	40.4	1,734	54.6	315	10.0	1,419	44.6	153
1986	3,376	1,383	40.8	1,715	50.8	343	10.2	1,372	40.6	278
1987	3,712	1,558	41.8	1,887	50.8	355	9.6	1,532	41.2	267
1988	4,190	1,781	42.5	2,089	49.9	367	8.8	1,722	41.1	320
1989	4,544	1,864	41.0	2,306	50.7	365	8.0	1,941	42.7	374
1990	4,892	1,927	39.4	2,567	52.5	376	7.7	2,191	44.8	398
1991	5,212	1,977	37.9	2,854	54.8	381	7.3	2,473	47.4	381
TOTAL	91,667	50,640	55.2	37,309	40.7	9,634	10.5	27,676	30.2	3,718

CHART 7-1

CITIZENSHIP OF ENGINEERING PhD RECIPIENTS, 1960 - 1991



Source: NSF/NRC

Graph by CPST (30 CITENGPH 7-2)

SOURCE: Earned Degrees Conferred Series, 1950–90, National Center for Education Statistics.

TABLE 7-3

PhD DEGREES IN ENGINEERING BY SEX AND SUBFIELD, 1950 – 1990

Year	Total			Engineering Fields																											
				Aeronautical				Chemical				Civil				Electrical				Industrial				Mechanical				Other			
	Eng	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W
'50–59	5,744	13	0.2	290	5	2	0.7	1,483	26	2	0.1	474	8	0	0.0	1,296	23	5	0.4	63	1	1	1.6	707	12	1	0.0	1,431	25	2	0.1
1960	786	3	0.4	23	3	1	4.3	170	22	0	0.0	74	9	1	1.4	203	26	1	0.5	13	2	0	0.0	107	14	0	0.0	196	25	0	0.0
1961	943	6	0.6	42	4	1	2.4	171	18	0	0.0	117	12	1	0.9	250	27	1	0.4	19	2	0	0.0	106	11	0	0.0	238	25	3	1.3
1962	1,207	4	0.3	54	4	0	0.0	225	19	1	0.4	145	12	0	0.0	295	24	1	0.3	26	2	1	3.8	159	13	0	0.0	303	25	1	0.3
1963	1,378	11	0.8	70	5	3	4.3	238	17	2	0.8	142	10	2	1.4	386	28	2	0.5	23	2	0	0.0	164	12	0	0.0	355	26	2	0.6
1964	1,693	7	0.4	72	4	1	1.4	262	15	1	0.4	218	13	1	0.5	460	27	2	0.4	32	2	0	0.0	200	12	0	0.0	449	27	2	0.4
1965	2,124	10	0.5	91	4	0	0.0	364	17	2	0.5	252	12	2	0.8	511	24	2	0.4	61	3	1	1.6	265	12	0	0.0	580	27	3	0.5
1966	2,304	9	0.4	105	5	0	0.0	354	15	3	0.8	283	12	1	0.4	569	25	2	0.4	45	2	0	0.0	289	13	0	0.0	659	29	3	0.5
1967	2,614	11	0.4	142	5	0	0.0	305	12	2	0.7	296	11	1	0.3	668	26	0	0.0	64	2	2	3.1	354	14	1	0.0	785	30	5	0.6
1968	2,932	12	0.4	162	6	1	0.6	367	13	3	0.8	376	13	0	0.0	723	25	0	0.0	79	3	2	2.5	395	13	1	0.0	830	28	5	0.6
1969	3,377	12	0.4	207	6	0	0.0	409	12	3	0.7	381	11	0	0.0	862	26	4	0.5	115	3	0	0.0	425	13	0	0.2	978	29	5	0.5
1970	3,681	24	0.7	211	6	2	0.9	438	12	4	0.9	411	11	2	0.5	882	24	3	0.3	126	3	3	2.4	435	12	0	0.0	1,178	32	10	0.8
1971	3,654	23	0.6	217	6	3	1.4	406	11	2	0.5	446	12	3	0.7	879	24	3	0.3	139	4	3	2.2	438	12	0	0.0	1,129	31	9	0.8
1972	3,704	25	0.7	197	5	0	0.0	394	11	1	0.3	415	11	2	0.5	824	22	3	0.4	168	5	0	0.0	411	11	1	0.0	1,295	35	18	1.4
1973	3,560	64	1.8	171	5	1	0.6	397	11	2	0.5	397	11	9	2.3	791	22	9	1.1	130	4	3	2.3	370	10	3	0.0	1,304	37	37	2.8
1974	3,336	55	1.6	173	5	3	1.7	400	12	10	2.5	368	11	4	1.1	705	21	8	1.1	146	4	2	1.4	385	12	6	0.0	1,159	35	22	1.9
1975	3,151	67	2.1	163	5	2	1.2	346	11	4	1.2	356	11	9	2.5	701	22	11	1.6	119	4	5	4.2	340	11	4	0.0	1,126	36	32	2.8
1976	2,835	69	2.4	139	5	2	1.4	308	11	9	2.9	370	13	9	2.4	649	23	14	2.2	121	4	3	2.5	305	11	2	0.0	943	33	30	3.2
1977	2,599	74	2.8	119	5	4	3.4	291	11	8	2.7	309	12	6	1.9	566	22	18	3.2	104	4	5	4.8	283	11	3	0.4	927	36	30	3.2
1978	2,442	57	2.3	115	5	2	1.7	259	11	7	2.7	277	11	6	2.2	503	21	13	2.6	118	5	5	4.2	279	11	6	0.4	891	36	18	2.0
1979	2,517	83	3.3	95	4	0	0.0	304	12	8	2.6	253	10	4	1.6	586	23	14	2.4	149	6	14	9.4	271	11	3	0.0	859	34	40	4.7
1980	2,519	96	3.8	99	4	1	1.0	284	11	15	5.3	270	11	6	2.2	525	21	14	2.7	116	5	7	6.0	281	11	4	0.0	944	37	49	5.2
1981	2,551	104	4.1	109	4	1	0.9	300	12	13	4.3	325	13	9	2.8	535	21	20	3.7	112	4	9	8.0	276	11	7	0.0	894	35	45	5.0
1982	2,621	138	5.3	96	4	1	1.0	311	12	19	6.1	329	13	14	4.3	526	20	21	4.0	116	4	13	11.2	333	13	13	0.3	910	35	57	6.3
1983	2,822	125	4.4	90	3	2	2.2	319	11	21	6.6	340	12	13	3.8	550	19	9	1.6	118	4	11	9.3	299	11	8	1.0	1,106	39	61	5.5
1984	2,979	165	5.5	106	4	2	1.9	330	11	19	5.8	369	12	24	6.5	585	20	14	2.4	119	4	17	14.3	319	11	7	1.9	1,151	39	82	7.1
1985	3,221	207	6.4	110	3	4	3.6	418	13	39	9.3	377	12	21	5.6	660	20	28	4.2	139	4	14	10.1	409	13	24	1.5	1,108	34	77	6.9
1986	3,400	228	6.7	112	3	2	1.8	446	13	50	11.2	395	12	29	7.3	722	21	39	5.4	130	4	19	14.6	426	13	11	0.7	1,169	34	78	6.7
1987	3,809	261	6.9	128	3	10	7.8	497	13	58	11.7	451	12	17	3.8	726	19	35	4.8	165	4	20	12.1	528	14	17	0.8	1,314	34	104	7.9
1988	4,181	293	7.0	141	3	7	5.0	579	14	53	9.2	481	12	26	5.4	860	21	42	4.9	162	4	22	13.6	596	14	25	1.2	1,362	33	118	8.7
1989	4,521	400	8.8	154	3	7	4.5	599	13	79	13.2	503	11	48	9.5	1002	22	66	6.6	203	4	26	12.8	634	14	24	2.1	1,426	32	150	10.5
1990	4,953	434	8.8	178	4	3	1.7	564	11	74	13.1	513	10	47	9.2	1169	24	84	7.2	191	4	36	18.8	754	15	36	1.1	1,584	32	154	9.7
60–69	19,358	85	0.4	988	5	7	0.7	2,865	15	17	0.6	2,284	12	9	0.4	4,927	25	15	0.3	477	2	6	1.3	2,464	13	2	0.0	5,373	28	29	0.5
70–79	31,479	541	1.7	1,600	5	19	1.2	3,543	11	55	1.6	3,602	11	54	1.5	7,066	23	98	1.4	1,320	4	43	3.3	3,517	11	28	0.0	10,811	34	246	2.3
80–89	32,624	2,017	6.2	1,145	4	37	3.2	4,083	13	366	9.0	3,840	12	207	5.4	6,691	21	288	4.3	1,380	4	158	11.4	4,101	13	140	3.4	11,384	35	821	7.2
TOTAL	94,158	3,090	3.3	4,181	4	68	1.6	12,538	13	514	4.1	10,713	11	317	3.0	21,169	22	488	2.3	3,431	4	244	7.1	11,543	12	207	1.8	30,583	32	1,252	4.1

SOURCE: Earned Degrees Conferred Series, 1950–90, National Center for Education Statistics

TABLE 7-4

MASTERS DEGREES IN ENGINEERING BY SUBFIELD AND SEX, 1950 – 1990

				Engineering Fields																															
	Total			Aero/Astro				Chemical				Civil				Electrical				Industrial				Mechanical				Other			
Year	Eng	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E
1960	7159	26	0.4	342	5	0	0.0	617	9	6	1.0	1052	15	1	0.1	1993	28	4	0.2	468	7	1	0.2	1179	16	4	0.3	1508	21						
1961	8178	28	0.3	437	5	3	0.7	650	8	2	0.3	1247	15	1	0.1	2414	30	4	0.2	458	6	0	0.0	1401	17	5	0.4	1571	19						
1962	8909	40	0.4	469	5	3	0.6	676	8	7	1.0	1286	14	9	0.7	2701	30	10	0.4	508	6	0	0.0	1531	17	2	0.1	1738	20						
1963	9635	32	0.3	575	6	4	0.7	711	7	2	0.3	1410	15	4	0.3	2816	29	9	0.3	603	6	0	0.0	1664	17	0	0.0	1856	19						
1964	10827	34	0.3	658	6	3	0.5	762	7	5	0.7	1567	14	6	0.4	3163	29	6	0.2	808	7	1	0.1	1886	17	3	0.2	1983	18						
1965	12056	44	0.4	699	6	6	0.9	806	7	3	0.4	1686	14	5	0.3	3505	29	7	0.2	1013	8	3	0.3	2036	17	5	0.2	2311	19						
1966	13678	76	0.6	798	6	6	0.8	994	7	7	0.7	2007	15	7	0.3	3872	28	22	0.6	1200	9	6	0.5	2154	16	7	0.3	2653	19						
1967	13885	78	0.6	802	6	2	0.2	949	7	7	0.7	2019	15	18	0.9	3953	28	11	0.3	1341	10	10	0.7	2176	16	7	0.3	2645	19						
1968	15188	99	0.7	841	6	6	0.7	1156	8	14	1.2	2137	14	14	0.7	4226	28	22	0.5	1512	10	9	0.6	2136	14	6	0.3	3180	21						
1969	15243	113	0.7	835	5	7	0.8	1136	7	9	0.8	2201	14	12	0.5	4033	26	22	0.5	1453	10	8	0.6	2298	15	4	0.2	3287	22						
1970	15597	172	1.1	749	5	3	0.4	1045	7	17	1.6	2242	14	19	0.8	4138	27	29	0.7	1763	11	17	1.0	2296	15	12	0.5	3362	22						
1971	16347	187	1.1	717	4	6	0.8	1100	7	26	2.4	2431	15	28	1.2	4282	26	30	0.7	1921	12	23	1.2	2238	14	5	0.2	3658	22						
1972	16802	281	1.7	687	4	7	1.0	1154	7	28	2.4	2487	15	38	1.5	4209	25	52	1.2	1731	10	25	1.4	2283	14	18	0.8	4251	25						
1973	16758	288	1.7	563	3	2	0.4	1051	6	21	2.0	2629	16	38	1.4	3899	23	49	1.3	1595	10	29	1.8	2142	13	19	0.9	4879	29						
1974	15393	362	2.4	557	4	9	1.6	1045	7	31	3.0	2653	17	49	1.8	3499	23	55	1.6	1734	11	45	2.6	1844	12	21	1.1	4061	26						
1975	15434	396	2.6	477	3	7	1.5	990	6	25	2.5	2771	18	74	2.7	3471	22	58	1.7	1687	11	56	3.3	1860	12	15	0.8	4178	27						
1976	16170	589	3.6	479	3	10	2.1	1031	6	29	2.8	3000	19	99	3.3	3774	23	104	2.8	1751	11	81	4.6	1907	12	27	1.4	4228	26						
1977	16889	733	4.3	385	2	8	2.1	1086	6	65	6.0	2969	18	129	4.3	3788	22	134	3.5	1609	10	75	4.7	1953	12	49	2.5	5099	30						
1978	17015	871	5.1	411	2	11	2.7	1237	7	87	7.0	2691	16	132	4.9	3742	22	143	3.8	1722	10	138	8.0	1943	11	57	2.9	5269	31						
1979	16193	990	6.1	372	2	17	4.6	1149	7	114	9.9	2655	16	143	5.4	3596	22	143	4.0	1502	9	128	8.5	1878	12	67	3.6	5041	31						
1980	16846	1190	7.1	382	2	9	2.4	1271	8	133	10.5	2683	16	197	7.3	3842	23	184	4.8	1313	8	133	10.1	2060	12	98	4.8	5295	31						
1981	16386	1323	8.1	408	2	20	4.9	1267	8	163	12.9	2891	18	207	7.2	3901	24	221	5.7	1631	10	166	10.2	2291	14	116	5.1	3997	24						
1982	17526	1573	9.0	521	3	39	7.5	1285	7	181	14.1	2995	17	270	9.0	4462	25	288	6.5	1656	9	210	12.7	2399	14	139	5.8	4208	24						
1983	18830	1746	9.3	491	3	37	7.5	1368	7	164	12.0	3074	16	294	9.6	4531	24	293	6.5	1432	8	206	14.4	2511	13	149	5.9	5423	29						
1984	20094	2096	10.4	562	3	27	4.8	1514	8	194	12.8	3146	16	326	10.4	5078	25	385	7.6	1557	8	278	17.9	2797	14	184	6.6	5440	27						
1985	20926	2242	10.7	605	3	31	5.1	1544	7	278	18.0	3172	15	337	10.6	5153	25	434	8.4	1462	7	227	15.5	3053	15	204	6.7	5937	28						
1986	21661	2493	11.5	621	3	43	6.9	1361	6	214	15.7	2926	14	300	10.3	5534	26	556	10.0	1653	8	279	16.9	3075	14	237	7.7	6491	30						
1987	22081	2769	12.5	718	3	55	7.7	1184	5	223	18.8	2901	13	379	13.1	6234	28	599	9.6	1726	8	319	18.5	3157	14	227	7.2	6161	28						
1988	22693	2806	12.4	797	4	63	7.9	1103	5	179	16.2	2839	13	326	11.5	6692	29	713	10.7	1815	8	324	17.9	3330	15	279	8.4	6117	27						
1989	23713	3080	13.0	855	4	64	7.5	1097	5	212	19.3	2902	12	366	12.6	7024	30	790	11.2	1823	8	356	19.6	3517	15	303	8.6	6495	27						
1990	23953	3262	13.6	1029	4	82	8.0	1030	4	182	17.7	2824	12	403	14.3	7128	30	851	11.9	1834	8	341	18.6	3443	14	324	9.4	6665	28						
50–59	48164	163	0.3	2673	6	13	0.5	5479	11	24	0.4	7134	15	23	0.3	12000	25	25	0.2	2561	5	5	0.2	8116	17	17	0.2	10201	21						
60–69	114758	570	0.5	6456	6	40	0.6	8457	7	62	0.7	16612	14	77	0.5	32676	28	117	0.4	9364	8	38	0.4	18461	16	43	0.2	22732	20						
70–79	162598	4869	3.0	5397	3	80	1.5	10888	7	443	4.1	26528	16	749	2.8	38398	24	797	2.1	17015	10	617	3.6	20346	13	290	1.4	44026	27						
80–89	200,756	21,318	10.6	5,960	3	388	6.5	12,994	6	1,941	14.9	29,529	15	3,002	10.2	52,451	26	4,463	8.5	16,068	8	2,500	15.6	26,190	14	1,936	6.9	55,564	28						
TOTAL	550,229	30,182	5.5	21,515	4	603	2.8	38,848	7	2,652	6.8	82,627	15	4,254	5.1	142,653	26	6,253	4.4	46,842	9	3,501	7.5	78,556	14	2,610	3.3	139,188	25						

SOURCE: Earned Degrees Conferred Series, 1950–90, National Center for Education Statistics

TABLE 7-5

BACHELORS DEGREES IN ENGINEERING BY SUBFIELD & SEX, 1950 – 1990

	Total			Engineering Fields																											
				Aero/Astro				Chemical				Civil				Electrical				Industrial				Mechanical				Other			
Year	Eng	Women	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E	Wom	%W	No.	%E		
50–59	324,364	873	0.3	11,080	3	62	0.6	28,820	9	173	0.6	51,817	16	106	0.2	78,237	24	161	0.2	10,772	3	29	0.3	83,470	26	130	0.2	60,186	19		
1960	37808	145	0.4	1698	4	6	0.4	2966	8	31	1.0	5303	14	15	0.3	10631	28	32	0.3	2242	6	10	0.4	9597	25	20	0.2	5371	14		
1961	35866	134	0.4	1666	5	5	0.3	2864	8	19	0.7	5385	15	25	0.5	10200	28	25	0.2	2084	6	7	0.3	8651	24	22	0.3	5016	14		
1962	34735	125	0.4	1440	4	5	0.3	2677	8	20	0.7	5235	15	23	0.4	10263	30	34	0.3	1904	5	8	0.4	8473	24	13	0.2	4743	14		
1963	33458	130	0.4	1292	4	4	0.3	2724	8	26	1.0	4854	15	18	0.4	10393	31	31	0.3	1861	6	10	0.5	7697	23	23	0.3	4637	14		
1964	35226	159	0.5	1455	4	7	0.5	2998	9	28	0.9	5077	14	24	0.5	11261	32	33	0.3	2194	6	8	0.4	7697	22	17	0.2	4544	13		
1965	36795	139	0.4	1717	5	8	0.5	3076	8	26	0.8	5200	14	13	0.3	11730	32	37	0.3	2236	6	6	0.3	8035	22	16	0.2	4801	13		
1966	35815	146	0.4	1683	5	5	0.3	2,981	8	23	0.8	5,611	16	23	0.4	10598	30	29	0.3	2335	7	10	0.4	7,811	22	19	0.2	4796	13		
1967	36186	184	0.5	1914	5	14	0.7	2,997	8	28	0.9	5,439	15	28	0.5	10421	29	42	0.4	2366	7	9	0.4	7,890	22	20	0.3	5159	14		
1968	37614	211	0.6	2072	6	12	0.6	3,395	9	30	0.9	5,796	15	31	0.5	10253	27	43	0.4	2727	7	15	0.6	7,930	21	32	0.4	5441	14		
1969	41553	313	0.8	2625	6	19	0.7	3,768	9	53	1.4	6,282	15	47	0.7	11203	27	66	0.6	3000	7	16	0.5	8,514	20	40	0.5	6161	15		
1970	44772	338	0.8	2756	6	20	0.7	3,995	9	57	1.4	6,800	15	53	0.8	11737	26	68	0.6	3199	7	21	0.7	9,310	21	39	0.4	6975	16		
1971	45387	365	0.8	2443	5	17	0.7	3,907	9	64	1.6	6,939	15	60	0.9	11410	25	78	0.7	3210	7	20	0.6	9,177	20	43	0.5	8301	18		
1972	46003	501	1.1	2180	5	20	0.9	3,967	9	80	2.0	7,258	16	77	1.1	11318	25	82	0.7	3713	8	40	1.1	8,784	19	49	0.6	8783	19		
1973	46989	580	1.2	1738	4	18	1.0	3,968	8	94	2.4	8,013	17	89	1.1	11323	24	158	1.4	3508	7	31	0.9	8,795	19	63	0.7	9644	21		
1974	43530	706	1.6	1210	3	18	1.5	3,826	9	120	3.1	8,633	20	145	1.7	10413	24	117	1.1	2921	7	44	1.5	7,883	18	66	0.8	8644	20		
1975	40065	860	2.1	1174	3	24	2.0	3,420	9	147	4.3	8,289	21	173	2.1	9329	23	130	1.4	2583	6	59	2.3	7,089	18	84	1.2	8181	20		
1976	39114	1443	3.7	1009	3	29	2.9	3,543	9	289	8.2	8,493	22	279	3.3	8957	23	193	2.2	2241	6	87	3.9	6,984	18	150	2.1	7887	20		
1977	41581	2086	5.0	1078	3	28	2.6	3,986	10	452	11.3	8,896	21	485	5.5	8935	21	268	3.0	2264	5	149	6.6	7,927	19	242	3.1	8493	20		
1978	47411	3497	7.4	1186	3	61	5.1	5,205	11	752	14.4	9,900	21	759	7.7	9812	21	435	4.4	2712	6	323	11.9	9,100	19	472	5.2	9496	20		
1979	53720	4919	9.2	1386	3	66	4.8	6,442	12	1,055	16.4	10,583	20	1,049	9.9	10822	20	659	6.1	2804	5	426	15.3	10,360	19	620	6.0	11323	21		
1980	59240	6014	10.2	1424	2	82	5.8	7,276	12	1,287	17.7	11,046	19	1,067	9.6	12248	21	893	7.3	3217	5	545	16.9	12,020	20	893	7.4	12009	20		
1981	64,068	7,117	11.1	1809	3	129	7.1	7,639	12	1,365	17.9	11,331	18	1,231	10.9	15,040	23	1,151	7.7	3833	6	756	19.7	13,573	21	1,151	8.5	12173	19		
1982	67,791	8,337	12.3	2120	3	171	8.1	8,059	12	1,612	20.0	11,280	17	1,318	11.7	16,553	24	1,266	7.6	3992	6	943	23.6	14,315	21	1,266	8.8	13268	20		
1983	72,954	9,719	13.3	2127	3	172	8.1	8,550	12	1,789	20.9	10,747	15	1,484	13.8	19,205	26	1,485	7.7	3748	5	981	26.2	16,031	22	1,485	9.3	15475	21		
1984	76,531	10,833	14.2	2534	3	175	6.9	9,192	12	2,077	22.6	10,351	14	1,423	13.7	21,541	28	1,812	8.4	3937	5	1054	26.8	17,040	22	1,812	10.6	15521	20		
1985	77,871	11,316	14.5	2854	4	241	8.4	8,941	11	2,093	23.4	9,730	12	1,342	13.8	23,668	30	1,801	7.6	3914	5	1148	29.3	17,200	22	1,801	10.5	11564	15		
1986	77,061	11,203	14.5	2902	4	248	8.5	7,411	10	1,606	21.7	9,223	12	1,229	13.3	26,112	34	1,710	6.5	4162	5	1260	30.3	16,586	22	1,710	10.3	10665	14		
1987	74,705	11,473	15.4	2989	4	248	8.3	6,114	8	1,540	25.2	8,746	12	1,196	13.7	26,791	36	1,727	6.4	4140	6	1323	32.0	15,723	21	1,727	11.0	10202	14		
1988	69,505	10,647	15.3	3902	6	298	7.6	3,926	6	1,058	26.9	7,497	11	1,964	26.2	23,598	34	3,172	13.4	4082	6	1196	29.3	14,918	21	1,711	11.5	11582	17		
1989	66,296	10,062	15.2	2944	4	301	10.2	3,684	6	1,103	29.9	7,316	11	1,038	14.2	21,909	33	2,831	12.9	3973	6	1209	30.4	13,883	21	1,654	11.9	12567	19		
1990	64,007	9,826	15.4	3048	5	343	11.3	3,450	5	1,035	30.0	7,273	11	1,112	15.3	20,890	33	2,576	12.3	3915	6	1157	29.6	14,435	23	1,690	11.7	10996	17		
80–89	385,056	1,886	0.5	17,562	5	85	0.5	30,446	8	284	0.9	54,182	15	247	0.5	108,953	29	372	0.3	22,949	6	99	0.4	82,295	23	222	0.3	80,989	14		
70–79	448,572	15,295	3.4	16,160	4	301	1.9	42,259	9	3,110	7.4	83,806	19	3,169	3.8	104,056	23	2,186	2.1	29,155	6	1,202	4.1	85,409	19	1,828	2.1	87,727	20		
60–89	708,022	98,721	13.7	25,605	4	2,065	8.1	70,792	10	15,530	21.9	97,267	14	13,312	13.7	208,665	29	17,848	8.6	38,998	6	10,415	26.7	151,289	21	15,210	10.1	125,048	18		
TOTAL	1,906,021	124,403	6.5	73,455	4	2,856	3.9	175,767	9	20,132	11.5	294,345	15	17,948	6.1	516,801	27	23,145	4.5	105,799	6	12,902	12.2	416,896	22	19,090	4.6	394,808	18		

SOURCE: Engineering and Technology Degrees, 1969 through 1991; Engineering Manpower Commission

TABLE 7-6

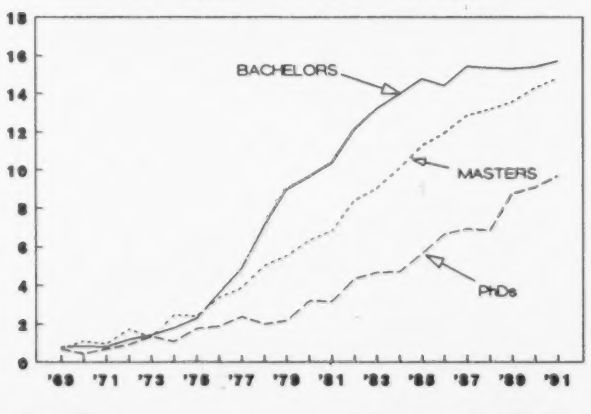
ENGINEERING DEGREES GRANTED TO WOMEN BY DEGREE LEVEL, 1969 – 1991

YEAR	BACHELORS			MASTERS+			PhDs		
	Total	Women	% W	Total	Women	% W	Total	Women	% W
1969*	39,972	328	0.8	14,980	107	0.7	3,387	23	0.7
1970*	42,966	358	0.8	15,548	170	1.1	3,620	16	0.4
1971*	43,167	353	0.8	16,383	158	1.0	3,640	25	0.7
1972	44,190	525	1.2	17,356	299	1.7	3,774	35	0.9
1973	43,429	624	1.4	17,152	226	1.3	3,587	48	1.3
1974	41,407	744	1.8	15,885	393	2.5	3,362	36	1.1
1975	38,210	878	2.3	15,773	380	2.4	3,039	53	1.7
1976	37,970	1,376	3.6	16,506	557	3.4	2,977	56	1.9
1977	40,095	1,961	4.9	16,551	646	3.9	2,814	67	2.4
1978	46,095	3,280	7.1	16,182	814	5.0	2,573	51	2.0
1979	52,598	4,716	9.0	15,624	866	5.5	2,815	61	2.2
1980	58,742	5,680	9.7	17,243	1,092	6.3	2,751	88	3.2
1981	62,935	6,545	10.4	17,914	1,225	6.8	2,841	90	3.2
1982	66,990	8,140	12.2	18,289	1,539	8.4	2,887	126	4.4
1983	72,471	9,566	13.2	19,909	1,796	9.0	3,023	142	4.7
1984	76,931	10,761	14.0	21,226	2,146	10.1	3,234	153	4.7
1985	77,892	11,516	14.8	22,502	2,538	11.3	3,382	192	5.7
1986	78,178	11,264	14.4	23,025	2,745	11.9	3,686	246	6.7
1987	75,735	11,675	15.4	24,290	3,119	12.8	4,275	296	6.9
1988	71,386	10,940	15.3	25,616	3,378	13.2	4,571	313	6.8
1989	68,824	10,529	15.3	26,412	3,585	13.6	5,017	440	8.8
1990	65,967	10,130	15.4	27,034	3,866	14.3	5,424	495	9.1
1991	63,986	10,016	15.7	27,754	4,117	14.8	5,680	551	9.7
TOTAL	1,310,136	131,905	10.1	449,154	35,762	8.0	82,359	3,603	4.4

* Totals for women in these years include only numbers actually reported. The totals would be higher if all institutions had reported all categories. From 1971–72 through 1984–85, estimates are included for schools that did not report. Beginning in 1985–86, no extimates were added for for the few missing schools. + Includes Engineer Degrees.

CHART 7-2

PERCENT WOMEN AMONG ENGINEERING GRADUATES BY LEVEL, 1969-91



Source EMC

Graph by CPST (288 PWM7)

FIELD: Engineering

SOURCE: Engineering and Technology Degrees, 1985 through 1991, Engineering Manpower Commission

TABLE 7-7

ENGINEERING DEGREES BY LEVEL, SEX, RACE & CITIZENSHIP, 1985 – 1991

BACHELORS

Year	Total	Women	%W	Black	%B	Hispanic Total+	%H	U. of P.R.	Asian/ Pacific	%A	American Indian	%I	Foreign Nat.	%F
1970	42,966	358	0.8	378	0.9									
1971	43,167	353	0.8	407	0.9								1,565	3.6
1972	44,190	525	1.2	579	1.3								1,944	4.4
1973	43,429	624	1.4	657	1.5	866	2.0	343	684	1.6	46	0.1	2,136	4.9
1974	41,407	744	1.8	756	1.8	1,037	2.5	397	957	2.3	32	0.1	2,436	5.9
1975	38,210	878	2.3	734	1.9	1,060	2.8	416	883	2.3	44	0.1	2,466	6.5
1976	37,970	1,376	3.6	777	2.0	1,019	2.7	339	1,074	2.8	41	0.1	2,799	7.4
1977	40,095	1,961	4.9	844	2.1	1,035	2.6	333	1,146	2.9	36	0.1	2,996	7.5
1978	46,091	3,280	7.1	894	1.9	1,072	2.3	324	1,195	2.6	37	0.1	3,084	6.7
1979	52,598	4,716	9.0	1,076	2.0	1,212	2.3	404	1,532	2.9	59	0.1	3,788	7.2
1980	58,742	5,680	9.7	1,320	2.2	1,332	2.3	329	1,922	3.3	60	0.1	4,895	8.3
1981	62,935	6,545	10.4	1,445	2.3	1,513	2.4	320	2,267	3.6	90	0.1	5,622	8.9
1982	66,990	8,140	12.2	1,644	2.5	1,608	2.4	338	2,577	3.8	91	0.1	5,410	8.1
1983	72,471	9,566	13.2	1,842	2.5	1,883	2.6	349	3,098	4.3	97	0.1	6,151	8.5
1984	76,931	10,761	14.0	2,022	2.6	2,038	2.6	355	3,609	4.7	112	0.1	5,833	7.6
1985	77,892	11,516	14.8	2,045	2.6	2,095	2.7	363	4,302	5.5	109	0.1	5,958	7.6
1986	78,178	11,264	14.4	2,114	2.7	2,227	2.8	363	4,826	6.2	129	0.2	6,275	8.0
1987	75,735	11,675	15.4	2,182	2.9	2,356	3.1	516	5,056	6.7	149	0.2	6,048	8.0
1988	71,386	10,940	15.3	2,211	3.1	2,471	3.5	551	5,591	7.8	187	0.3	5,763	8.1
1989	68,824	10,529	15.3	2,122	3.1	2,549	3.7	553	5,873	8.5	192	0.3	5,719	8.3
1990	65,967	10,130	15.4	2,173	3.3	2,473	3.7	516	5,989	9.1	122	0.2	5,121	7.8
1991	63,986	10,016	15.7	2,304	3.6	2,663	4.2	540	6,305	9.9	146	0.2	4,540	7.1

MASTERS*

Year	Total	Women	%W	Black	%B	Hispanic Total+	%H	U. of P.R.	Asian/ Pacific	%A	American Indian	%I	Foreign Nat.	%F
1970	15,548	170	1.1	50	0.3									
1971	16,282	158	1.0	47	0.3								2,952	18.1
1972	17,356	299	1.7	78	0.4								2,973	17.1
1973	18,152	226	1.2	104	0.6	139	0.8	13	261	1.4	15	0.1	2,551	14.1
1974	15,885	393	2.5	158	1.0	192	1.2	6	425	2.7	4	0.0	3,099	19.5
1975	15,773	380	2.4	141	0.9	185	1.2	2	482	3.1	3	0.0	3,250	20.6
1976	16,506	557	3.4	154	0.9	191	1.2	7	782	4.7	14	0.1	3,691	22.4
1977	16,551	646	3.9	147	0.9	217	1.3	6	708	4.3	7	0.0	3,825	23.1
1978	16,182	814	5.0	202	1.2	243	1.5	9	797	4.9	4	0.0	3,720	23.0
1979	15,624	866	5.5	157	1.0	213	1.4	15	675	4.3	9	0.1	3,944	25.2
1980	17,243	1,092	6.3	167	1.0	247	1.4	7	827	4.8	4	0.0	4,512	26.2
1981	17,914	1,225	6.8	183	1.0	281	1.6	1	968	5.4	8	0.0	4,677	26.1
1982	18,543	1,539	8.3	188	1.0	218	1.2	8	850	4.6	15	0.1	5,284	28.5
1983	19,909	1,796	9.0	258	1.3	310	1.6	12	1,294	6.5	16	0.1	5,145	25.8
1984	21,226	2,146	10.1	257	1.2	373	1.8	9	1,354	6.4	25	0.1	5,728	27.0
1985	22,502	2,538	11.3	311	1.4	371	1.6	9	1,529	6.8	28	0.1	6,115	27.2
1986	23,025	2,745	11.9	345	1.5	331	1.4	9	1,712	7.4	27	0.1	5,735	24.9
1987	24,290	3,119	12.8	366	1.5	393	1.6	9	1,774	7.3	33	0.1	6,315	26.0
1988	25,616	3,378	13.2	424	1.7	450	1.8	10	1,999	7.8	36	0.1	7,474	29.2
1989	26,412	3,585	13.6	365	1.4	497	1.9	28	1,785	6.8	32	0.1	7,329	27.7
1990	26,755	3,826	14.3	422	1.6	518	1.9	33	2,230	8.3	38	0.1	7,913	29.6
1991	27,754	4,117	14.8	482	1.7	498	1.8	23	2,344	8.4	37	0.1	8,262	29.8

* Includes professional Engineer degrees. + Total Hispanic includes University of Puerto Rico.

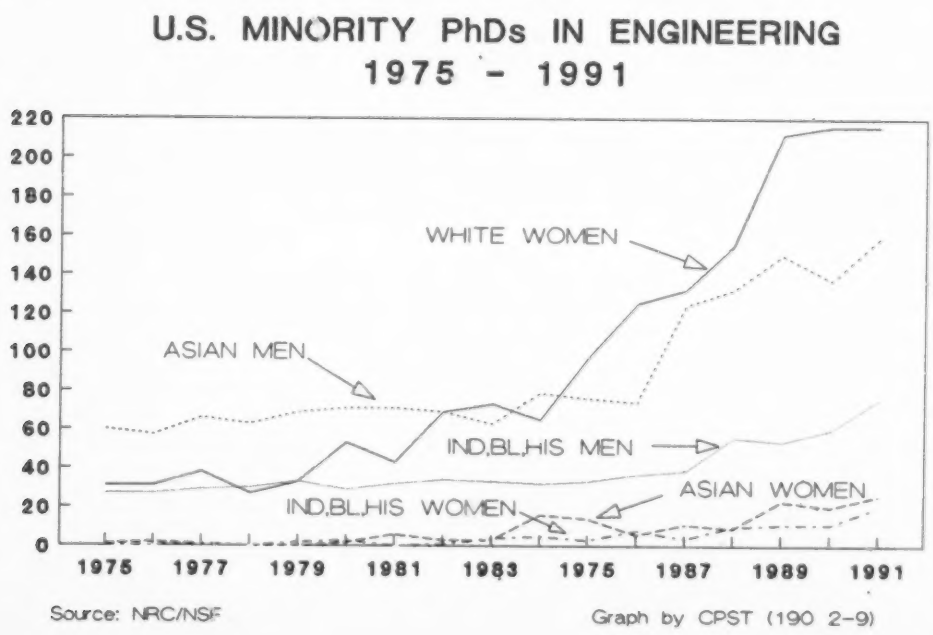
TABLE 7-7 (continued)

ENGINEERING DEGREES BY LEVEL, SEX, RACE & CITIZENSHIP, 1970 – 1991 (Continued)

DOCTORATES														
Year	Total	Women	%W	Black	%B	Hispanic Total+	%H	U. of P.R.	Asian/ Pacific	%A	American Indian	%I	Foreign Nat.	%F
1970	3,620	16	0.4	1	0.0									
1971	3,640	25	0.7	8	0.2								741	20.4
1972	3,774	35	0.9	13	0.3								773	20.5
1973	3,587	48	1.3	13	0.4	12	0.3		55	1.5	1	0.0	708	19.7
1974	3,362	36	1.1	12	0.4	20	0.6		106	3.2			1,014	30.2
1975	3,039	53	1.7	17	0.6	28	0.9		141	4.6	2	0.1	891	29.3
1976	2,977	56	1.9	10	0.3	15	0.5		168	5.6			1,060	35.6
1977	2,814	67	2.4	16	0.6	22	0.8		158	5.6	1	0.0	995	35.4
1978	2,573	51	2.0	15	0.6	25	1.0		175	6.8	3	0.1	874	34.0
1979	2,815	61	2.2	19	0.7	22	0.8		177	6.3			929	33.0
1980	2,751	88	3.2	19	0.7	25	0.9		154	5.6	1	0.0	982	35.7
1981	2,841	90	3.2	16	0.6	20	0.7		148	5.2	3	0.1	1,054	37.1
1982	2,887	126	4.4	11	0.4	26	0.9		124	4.3	2	0.1	1,167	40.4
1983	3,023	142	4.7	19	0.6	41	1.4		173	5.7			1,192	39.4
1984	3,234	153	4.7	24	0.7	25	0.8		267	8.3			1,253	38.7
1985	3,383	192	5.7	32	0.9	34	1.0		246	7.3	4	0.1	1,400	41.4
1986	3,686	246	6.7	17	0.5	38	1.0		229	6.2	4	0.1	1,441	39.1
1987	4,175	296	7.1	18	0.4	25	0.6		234	5.6	6	0.1	1,800	43.1
1988	4,571	313	6.8	29	0.6	36	0.8		274	6.0	3	0.1	2,033	44.5
1989	5,017	440	8.8	31	0.6	37	0.7		281	5.6	2	0.0	2,299	45.8
1990	5,424	495	9.1	36	0.7	53	1.0		300	5.5	7	0.1	2,649	48.8
1991	5,680	551	9.7	43	0.8	51	0.9		345	6.1	6	0.1	2,898	51.0

Note: 1970 and 1971 totals for minority groups are for only numbers actually reported. From 1972 through 1985 estimates based on previous year's reports were made for schools that did not report. Beginning in 1986 no estimates were added for the few missing schools.

CHART 7-3



FIELD: Engineering

SOURCE: Engineering and Technology Degrees, 1991, Engineering Manpower Commission

TABLE 7-8

ENGINEERING GRADUATES* BY SEX, CITIZENSHIP AND MINORITY STATUS, 1991

Ethnic Group/ Citizenship	Engineering Degrees						Technology Degrees			
	BS		MS+		PhD		Associate		BS	
	No.	%	No.	%	No.	%	No.	%	No.	%
Total	63,986	100	27,754	100	5,680	100	12,276	100	10,517	100
White American	48,028	75.1	16,131	58.1	2,337	41.1	10,767	87.7	8,563	81.4
African American	2,304	3.6	482	1.7	43	0.8	581	4.7	673	6.4
Hispanic American	2,663	4.2	498	1.8	51	0.9	290	2.4	308	2.9
Native American	146	0.2	37	0.1	6	0.1	42	0.3	26	0.2
Asian American	6,305	9.9	2,344	8.4	345	6.1	387	3.2	498	4.7
Foreign Nationals	4,540	7.1	8,262	29.8	2,898	51.0	209	1.7	449	4.3
Under–Rep Minorities	5,113	8.0	1,017	3.7	100	1.8	913	7.4	1,007	9.6
Women	10,016	100	4,134	100	551	100	1,359	100	781	100
White American	7,081	70.7	2,600	62.9	312	56.6	1,176	86.5	592	75.8
African American	721	7.2	130	3.1	9	1.6	95	7.0	104	13.3
Hispanic American	513	5.1	91	2.2	11	2.0	33	2.4	28	3.6
Native American	26	0.3	7	0.2	1	0.2	2	0.1	3	0.4
Asian American	1,245	12.4	412	10.0	37	6.7	45	3.3	36	4.6
Foreign Nationals	430	4.3	894	21.6	181	32.8	8	0.6	18	2.3
Under–Rep Minorities	1,260	12.6	228	5.5	21	3.8	130	9.6	135	17.3
% Women	15.7		14.9		9.7		11.1		7.4	
White American	14.7		16.1		13.4		10.9		6.9	
African American	31.3		27.0		20.9		16.4		15.5	
Hispanic American	19.3		18.3		21.6		11.4		9.1	
Native American	17.8		18.9		16.7		4.8		11.5	
Asian American	19.7		17.6		10.7		11.6		7.2	
Foreign Nationals	9.5		10.8		6.2		3.8		4.0	
Under–Rep Minorities	24.6		22.4		21.0		14.2		13.4	
Men	53,902	100	23,267	100	5,039	100	10,810	100	9,554	100
White American	41,738	77.4	13,565	58.3	2,025	40.2	9,591	88.7	7,971	83.4
African American	1,400	2.6	351	1.5	33	0.7	435	4.0	496	5.2
Hispanic American	2,043	3.8	398	1.7	40	0.8	237	2.2	268	2.8
Native American	113	0.2	29	0.1	5	0.1	38	0.4	20	0.2
Asian American	4,777	8.9	1,852	8.0	307	6.1	312	2.9	437	4.6
Foreign Nationals	3,831	7.1	7,072	30.4	2,688	53.3	192	1.8	403	4.2
Under–Rep Minorities	3,556	6.6	778	3.3	78	1.5	710	6.6	784	8.2
% Men	84.2		83.8		88.7		88.1		90.8	
White American	86.9		84.1		86.6		89.1		93.1	
African American	60.8		72.8		76.7		74.9		73.7	
Hispanic American	76.7		79.9		78.4		81.7		87.0	
American Indian	77.4		78.4		83.3		90.5		76.9	
Asian American	75.8		79.0		89.0		80.6		87.8	
Foreign Nationals	84.4		85.6		92.8		91.9		89.8	
Under–Rep Minorities	69.5		76.5		78.0		77.8		77.9	

* Includes only those whose race, sex & citizenship were reported. + Includes Engineer Degrees

FIELD: Engineering

SOURCE: Engineering and Technology Degrees, 1989 through 1991, Engineering Manpower Commission

TABLE 7-9

ENGINEERING DOCTORATE DEGREES AWARDED TO WOMEN, MINORITIES, & FOREIGN NATIONALS BY CURRICULUM 1989 – 1991

CURRICULUM	TOTAL			WOMEN			AFRICAN AM			HISPANIC			ASIAN AMER			NATIVE AM.			FOREIGN NATION		
	1989	1990	1991	'89	'90	'91	'89	'90	'91	'89	'90	'91	'89	'90	'91	'89	'90	'91	'89	'90	'91
Aerospace	167	189	205	9	4	7	3	1	1	1	1	0	10	12	10	0	0	0	91	102	96
Agricultural	97	94	76	4	7	7	1	3	0	1	2	1	3	3	0	0	0	0	48	46	48
Architectural	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Biomedical	86	103	120	18	17	24	2	2	1	3	0	3	4	6	6	0	1	0	17	27	40
Ceramic	25	38	56	2	7	10	0	0	0	1	0	1	0	0	4	0	1	0	9	16	24
Chemical	680	667	692	78	87	92	2	5	5	6	12	12	37	28	33	0	1	1	250	246	297
Civil	554	539	567	52	55	45	2	1	6	3	6	5	30	23	23	0	0	1	305	318	359
Computer	277	339	414	33	44	55	3	2	2	1	2	2	13	19	30	0	0	0	108	141	196
EE	1139	1262	1343	79	89	79	8	9	13	10	12	13	71	89	111	1	0	2	517	631	674
Eng Science	238	239	227	19	20	23	2	4	1	0	0	2	10	15	14	1	0	0	85	93	77
Environmental	49	51	56	10	10	14	0	0	2	1	0	0	3	3	3	0	0	0	14	21	20
Gen Engineering	81	58	74	6	3	5	1	0	2	0	1	0	9	8	5	0	0	0	41	23	38
Industrial	204	200	204	28	36	24	3	1	1	2	3	3	16	10	12	0	0	0	110	96	123
Marine, N. Arc. & O.	26	21	36	1	5	2	0	0	0	0	3	0	0	0	0	0	0	0	18	14	25
Materials & Metall.	326	392	414	40	41	72	0	0	1	0	2	1	28	15	26	0	2	0	142	195	223
Mechanical	795	900	892	33	45	60	3	6	5	5	6	6	32	54	46	0	1	2	425	521	503
Mining & Mineral	74	79	68	9	7	9	0	2	1	0	1	0	2	4	3	0	0	0	32	32	44
Nuclear	90	115	118	6	9	8	0	0	0	1	2	2	3	7	10	0	0	0	42	52	47
Petroleum	29	54	35	1	0	1	1	0	0	0	0	0	2	2	2	0	0	0	14	32	25
Systems	56	69	65	8	6	11	0	0	1	2	0	0	6	1	7	0	1	0	27	39	33
Other	24	15	16	4	3	3	0	0	1	0	0	0	2	1	0	0	0	0	4	4	5
TOTAL	5017	5424	5680	440	495	551	31	36	43	37	53	51	281	300	345	2	7	6	2299	2649	2898

Note: Women are included in ethnic and foreign national categories. Foreign nationals are not included in ethnic categories

FIELD: Engineering

SOURCE: Engineering and Technology Degrees, 1989 through 1991, Engineering Manpower Commission

TABLE 7-10

ENGINEERING MASTERS* DEGREES AWARDED TO WOMEN, MINORITIES & FOREIGN NATIONALS BY CURRICULUM
1989 – 1991

CURRICULUM	TOTAL			WOMEN			AFRICAN AM			HISPANIC			ASIAN AMER			NATIVE AM			FOREIGN NATIONAL		
	1989	1990	1991	'89	'90	'91	'89	'90	'91	'89	'90	'91	'89	'90	'91	'89	'90	'91	'89	'90	'91
Aerospace	865	1016	969	65	86	82	2	10	12	15	15	19	35	68	59	0	0	0	185	198	191
Agricultural	160	189	172	13	24	13	0	4	2	0	8	3	3	1	0	0	0	0	64	80	80
Architectural	29	33	40	0	0	8	0	1	6	0	0	0	0	1	1	0	0	0	13	22	16
Bioengineering	303	310	337	66	102	99	6	5	6	3	5	4	12	19	15	0	2	1	82	82	104
Ceramics	100	80	95	20	16	16	0	0	3	0	1	1	6	2	4	1	1	0	24	18	38
Chemical	1220	1140	1022	222	185	193	21	24	19	38	29	26	84	59	60	4	2	1	360	436	405
Civil/Constr	3050	2940	3123	360	416	413	38	47	26	69	59	59	184	167	174	8	8	10	1082	1059	1126
Computer	2930	3265	3398	607	698	734	52	40	71	38	44	53	288	334	402	3	1	3	782	959	937
EE	7520	7691	7823	815	843	866	136	122	156	131	158	167	739	868	931	9	13	10	2106	2268	2332
Eng Science	675	701	742	118	124	126	13	12	14	11	10	8	73	63	75	2	2	1	123	122	140
Environmental	427	471	574	103	120	157	4	10	6	6	10	7	25	34	20	0	1	0	92	88	128
Gen Engineering	601	496	496	76	93	79	11	8	4	10	13	2	75	51	49	0	0	0	181	69	90
Industrial	2404	2489	2740	412	416	531	72	52	54	58	65	70	130	172	155	0	1	3	575	705	800
Marine	121	146	144	9	13	14	0	3	0	1	2	1	2	2	6	0	0	0	43	49	44
Materials/Metall	672	671	690	130	119	154	2	6	8	10	9	6	45	43	36	0	0	1	213	248	264
Mechanical	3855	3994	3925	304	341	370	38	48	66	54	57	51	240	277	264	8	6	5	1194	1143	1181
Mining/Mineral	237	192	223	39	20	33	1	1	1	3	2	1	2	1	6	0	0	0	54	64	64
Nuclear	245	236	226	19	25	24	1	3	1	5	5	5	6	8	5	1	1	0	63	65	69
Petroleum/Nat Gas	197	162	117	14	9	3	0	2	1	4	6	1	12	9	2	0	0	0	72	63	55
Systems	662	692	738	154	186	172	23	28	23	11	16	10	33	45	73	0	0	2	141	155	159
Other	139	120	160	39	30	30	4	0	3	1	1	4	5	2	7	0	0	0	25	20	39
TOTAL	26412	27034	27754	3585	3866	4117	424	424	482	468	515	498	1999	2226	2344	36	38	37	7474	7913	8262

Note: Women are included in ethnic and foreign national categories. Foreign nationals are not included in ethnic categories.

* Includes Professional Engineer Degrees.

FIELD: Engineering

SOURCE: Engineering and Technology Degrees, 1989 through 1991, Engineering Manpower Commisson

TABLE 7-11

ENGINEERING BACHELORS DEGREES AWARDED TO WOMEN, MINORITIES & FOREIGN NATIONALS BY CURRICULUM
1989 – 1991

CURRICULUM	TOTAL			WOMEN			AFRICAN AM			HISPANIC			ASIAN AMER			NATIVE AM			FOREIGN NAT		
	1989	1990	1991	'89	'90	'91	'89	'90	'91	'89	'90	'91	'89	'90	'91	'89	'90	'91	'89	'90	'91
Aerospace	3065	2971	2898	304	316	322	56	48	68	89	80	109	158	201	231	11	0	5	149	147	102
Agricultural	330	317	267	29	49	35	3	4	1	8	9	7	4	3	11	0	1	0	20	15	14
Architectural	346	375	355	75	69	78	36	22	30	11	7	8	11	14	19	3	0	1	67	56	26
Bioengineering	677	695	665	218	207	250	15	15	19	26	18	20	80	102	108	2	0	1	53	69	58
Ceramics	289	348	310	74	75	52	7	8	7	3	8	2	11	15	17	0	0	0	6	7	8
Chemical	3711	3622	3612	1101	1053	1152	136	140	177	150	162	150	246	221	246	6	6	10	242	224	180
Civil/Constr	7688	7587	7748	1036	1101	1185	170	182	189	274	279	397	353	388	450	28	15	17	864	600	441
Computer	4398	4355	4447	817	779	717	139	122	140	172	162	210	550	606	581	15	5	8	415	381	396
EE	22929	21385	19858	2930	2600	2521	861	882	887	861	830	784	2930	2920	3044	51	41	38	2238	2168	1959
Eng Science	1339	1045	1110	226	201	220	34	18	24	22	21	24	190	80	93	2	2	1	72	54	77
Environmental	138	137	168	48	56	41	1	0	2	2	4	2	3	2	0	0	2	1	1	1	2
Gen Engineering	1058	1239	1115	197	215	204	42	41	28	47	59	33	106	123	68	2	3	5	55	65	36
Industrial	4519	4306	4295	1304	1207	1179	195	192	239	263	242	240	229	244	293	12	4	13	378	373	342
Marine	468	475	410	31	27	41	4	3	5	3	9	20	15	10	8	0	0	1	17	15	12
Materials/Metall	842	857	856	196	214	199	15	16	9	20	20	29	42	56	67	3	1	2	32	38	32
Mechanical	15369	14969	14626	1682	1732	1599	377	452	461	522	531	595	898	938	991	55	30	39	935	779	722
Mining/Mineral	274	168	182	54	27	23	2	0	2	7	3	2	6	3	4	0	0	0	36	19	17
Nuclear	303	264	261	35	34	35	4	6	3	14	9	11	13	10	8	0	0	1	14	7	7
Petroleum/Nat Ga	436	286	235	48	20	29	5	5	2	21	7	7	11	7	6	2	1	1	65	73	73
Systems	457	362	368	83	100	92	14	13	9	13	9	9	40	46	54	0	0	2	53	24	29
Other	188	204	200	41	44	42	6	4	2	1	3	4	7	0	6	0	1	0	7	6	7
TOTAL	68824	65967	63986	10529	10126	10016	2122	2173	2304	2529	2472	2663	5873	5989	6305	192	112	146	5719	5121	4540

Note: Women are included in ethnic and foreign national categories. Foreign nationals are not included in ethnic categories.

FIELD: Engineering

SOURCE: Engineering and Technology Degrees 1975 through 1991, Engineering Manpower Commision

TABLE 7-12

BACHELORS DEGREES IN CHEMICAL ENGINEERING BY SEX, MINORITY GROUP AND CITIZENSHIP, 1975 – 1991

YEAR	ALL ENGINEERS	CHEM ENG.	%	WOMEN No.	%	BLACKS No.	%	HISPANICS No.	%	ASIAN No.	%	AM. INDIAN No.	%	FOREIGN No.	%
1975	38,210	3,167	8.3	131	4.1	40	1.3	37	1.2	74	2.3	0	0.0	--	--
1976	37,970	3,146	8.3	239	7.6	54	1.7	22	0.7	72	2.3	2	0.1	267	8.5
1977	40,095	3,593	9.0	403	11.2	52	1.4	37	1.0	113	3.1	2	0.1	288	8.0
1978	46,091	4,621	10.0	676	14.6	86	1.9	58	1.3	139	3.0	4	0.1	291	6.3
1979	52,598	5,837	11.1	978	16.8	107	1.8	40	0.7	210	3.6	5	0.1	361	6.2
1980	58,742	6,555	11.2	1,130	17.2	137	2.1	87	1.3	239	3.6	11	0.2	353	5.4
1981	62,935	6,863	10.9	1,162	16.9	166	2.4	179	2.6	234	3.4	17	0.2	429	6.3
1982	66,990	7,039	10.5	1,448	20.6	182	2.6	111	1.6	258	3.7	10	0.1	311	4.4
1983	72,471	7,499	10.3	1,703	22.7	207	2.8	195	2.6	309	4.1	9	0.1	379	5.1
1984	76,931	7,685	10.0	1,829	23.8	250	3.3	113	1.5	376	4.9	9	0.1	328	4.3
1985	77,892	7,324	9.4	1,886	25.8	221	3.0	145	2.0	341	4.7	12	0.2	330	4.5
1986	78,178	6,148	7.9	1,483	24.1	194	3.2	179	2.9	296	4.8	13	0.2	281	4.6
1987	75,735	5,129	6.8	1,379	26.9	186	3.6	149	2.9	231	4.5	10	0.2	237	4.6
1988	71,386	4,082	5.7	1,079	26.4	164	4.0	152	3.7	234	5.7	11	0.3	261	6.4
1989	68,824	3,711	5.4	1,101	29.7	136	3.7	150	4.0	246	6.6	6	0.2	242	6.5
1990	65,967	3,622	5.5	1,053	29.1	140	3.9	163	4.5	221	6.1	6	0.2	224	6.2
1991	63,986	3,612	5.6	1,152	31.9	177	4.9	150	4.2	246	6.8	10	0.3	180	5.0
TOTAL	1,055,001	89,633	8.5	18,832	21.0	2,499	2.8	1,967	2.2	3,839	4.3	137	0.2	4,762	5.3

TABLE 7-13

BACHELORS DEGREES IN CIVIL ENGINEERING BY SEX, MINORITY GROUP AND CITIZENSHIP, 1975 – 1991

YEAR	ALL ENGINEERS	CIVIL ENG.	%	WOMEN No.	%	BLACKS No.	%	HISPANICS No.	%	ASIAN No.	%	AM. INDIAN No.	%	FOREIGN No.	%
1975	38,210	7,957	20.8	154	1.9	94	1.2	147	1.8	196	2.5	9	0.1	--	--
1976	37,970	7,947	20.9	220	2.8	87	1.1	126	1.6	182	2.3	13	0.2	471	5.9
1977	40,095	8,248	20.6	398	4.8	109	1.3	122	1.5	251	3.0	11	0.1	563	6.8
1978	46,091	9,168	19.9	633	6.9	118	1.3	169	1.8	209	2.3	5	0.1	728	7.9
1979	52,598	10,030	19.1	948	9.5	152	1.5	149	1.5	303	3.0	11	0.1	890	8.9
1980	58,742	10,191	17.3	931	9.1	158	1.6	168	1.6	290	2.8	9	0.1	1,309	12.8
1981	62,935	10,547	16.8	1,065	10.1	176	1.7	265	2.5	323	3.1	17	0.2	1,455	13.8
1982	66,990	10,330	15.4	1,144	11.1	176	1.7	181	1.8	309	3.0	14	0.1	1,456	14.1
1983	72,471	10,484	14.5	1,315	12.5	213	2.0	300	2.9	369	3.5	12	0.1	1,619	15.4
1984	76,931	9,877	12.8	1,295	13.1	197	2.0	254	2.6	356	3.6	14	0.1	1,452	14.7
1985	77,892	9,468	12.2	1,214	12.8	188	2.0	222	2.3	343	3.6	16	0.2	1,509	15.9
1986	78,178	8,798	11.3	1,091	12.4	168	1.9	282	3.2	351	4.0	14	0.2	1,425	16.2
1987	75,735	8,388	11.1	1,096	13.1	200	2.4	252	3.0	354	4.2	18	0.2	1,194	14.2
1988	71,386	7,714	10.8	1,072	13.9	179	2.3	267	3.5	359	4.7	36	0.5	950	12.3
1989	68,824	7,688	11.2	1,036	13.5	170	2.2	274	3.6	353	4.6	28	0.4	864	11.2
1990	65,967	7,587	11.5	1,101	14.5	182	2.4	279	3.7	388	5.1	15	0.2	600	7.9
1991	63,986	7,748	12.1	1,185	15.3	189	2.4	397	5.1	450	5.8	17	0.2	441	5.7
TOTAL	1,055,001	152,170	14.4	15,898	10.4	2,756	1.8	3,854	2.5	5,386	3.5	259	0.2	16,926	11.1

FIELD: Engineering

SOURCE: **Engineering and Technology Degrees 1975** through 1981, Engineering Manpower Commission

TABLE 7-14

BACHELORS DEGREES IN COMPUTER ENGINEERING BY SEX, MINORITY GROUP AND CITIZENSHIP, 1975 – 1991

YEAR	ALL ENGINEERS	COMP ENG.	%	WOMEN No.	%	BLACKS No.	%	HISPANICS No.	%	ASIAN No.	%	AM. INDIAN No.	%	FOREIGN No.	%
1975	38,210	599	1.6	54	9.0	9	1.5	6	1.0	10	1.7	1	0.2	--	--
1976	37,970	796	2.1	79	9.9	24	3.0	5	0.6	25	3.1	2	0.3	37	4.6
1977	40,095	1,280	3.2	117	9.1	40	3.1	11	0.9	111	8.7	3	0.2	82	6.4
1978	46,091	1,546	3.4	193	12.5	39	2.5	23	1.5	140	9.1	1	0.1	93	6.0
1979	52,598	1,510	2.9	206	13.6	22	1.5	23	1.5	93	6.2	0	0.0	77	5.1
1980	58,742	1,816	3.1	260	14.3	34	1.9	32	1.8	180	9.9	2	0.1	94	5.2
1981	62,935	2,356	3.7	316	13.4	40	1.7	35	1.5	212	9.0	2	0.1	167	7.1
1982	66,990	2,666	4.0	476	17.9	63	2.4	14	0.5	195	7.3	15	0.6	152	5.7
1983	72,471	2,643	3.6	506	19.1	62	2.3	59	2.2	185	7.0	3	0.1	130	4.9
1984	76,931	3,499	4.5	800	22.9	83	2.4	64	1.8	289	8.3	2	0.1	176	5.0
1985	77,892	4,248	5.5	945	22.2	102	2.4	76	1.8	393	9.3	4	0.1	257	6.0
1986	78,178	4,999	6.4	1,045	20.9	91	1.8	132	2.6	482	9.6	10	0.2	381	7.6
1987	75,735	5,012	6.6	1,072	21.4	133	2.7	199	4.0	450	9.0	12	0.2	443	8.8
1988	71,386	4,275	6.0	797	18.6	117	2.7	185	4.3	438	10.2	15	0.4	422	9.9
1989	68,824	4,398	6.4	817	18.6	139	3.2	172	3.9	550	12.5	15	0.3	415	9.4
1990	65,967	4,355	6.6	779	17.9	122	2.8	162	3.7	606	13.9	5	0.1	381	8.7
1991	63,986	4,447	6.9	717	16.1	140	3.1	210	4.7	581	13.1	8	0.2	396	8.9
TOTAL	1,055,001	50,445	4.8	9,179	18.2	1,260	2.5	1,408	2.8	4,940	9.8	100	0.2	3,703	7.3

TABLE 7-15

BACHELORS DEGREES IN ELECTRICAL ENGINEERING BY SEX, MINORITY GROUP AND CITIZENSHIP, 1975 – 1991

YEAR	ALL ENGINEERS	ELEC ENG.	%	WOMEN No.	%	BLACKS No.	%	HISPANICS No.	%	ASIAN No.	%	AM. INDIAN No.	%	FOREIGN No.	%
1975	38,210	10,277	26.9	138	1.3	286	2.8	203	2.0	318	3.1	11	0.1	--	--
1976	37,970	9,954	26.2	207	2.1	257	2.6	194	1.9	310	3.1	11	0.1	650	6.5
1977	40,095	9,837	24.5	239	2.4	296	3.0	186	1.9	276	2.8	7	0.1	727	7.4
1978	46,091	10,702	23.2	414	3.9	293	2.7	195	1.8	270	2.5	9	0.1	686	6.4
1979	52,598	12,213	23.2	624	5.1	344	2.8	226	1.9	394	3.2	16	0.1	889	7.3
1980	58,742	13,594	23.1	807	5.9	464	3.4	269	2.0	565	4.2	13	0.1	1,096	8.1
1981	62,935	14,558	23.1	929	6.4	499	3.4	435	3.0	683	4.7	22	0.2	1,317	9.0
1982	66,990	16,094	24.0	1,280	8.0	525	3.3	344	2.1	881	5.5	19	0.1	1,333	8.3
1983	72,471	18,590	25.7	1,786	9.6	603	3.2	593	3.2	1,176	6.3	27	0.1	1,722	9.3
1984	76,931	20,495	26.6	1,996	9.7	626	3.1	526	2.6	1,320	6.4	19	0.1	1,761	8.6
1985	77,892	22,055	28.3	2,386	11.6	720	3.3	561	2.7	1,866	9.1	25	0.1	1,828	8.9
1986	78,178	24,514	31.4	2,755	12.5	806	3.7	721	3.3	2,337	10.6	44	0.2	2,165	9.8
1987	75,735	25,198	33.3	3,173	12.6	853	3.4	762	3.0	2,674	10.6	54	0.2	2,251	8.9
1988	71,386	24,367	34.1	3,177	13.0	850	3.5	784	3.2	2,887	11.8	54	0.2	2,229	9.1
1989	68,824	22,929	33.3	2,930	12.8	861	3.8	861	3.8	2,930	12.8	51	0.2	2,238	9.8
1990	65,967	21,385	32.4	2,600	12.2	882	4.1	830	3.9	2,920	13.7	41	0.2	2,168	10.1
1991	63,986	19,858	31.0	2,521	12.7	887	4.5	784	3.9	3,044	15.3	38	0.2	1,959	9.9
TOTAL	1,055,001	296,620	30.9	27,962	9.4	10,052	3.4	8,474	2.9	24,851	8.4	461	0.2	25,018	8.4

FIELD: Engineering

SOURCE: **Engineering and Technology Degrees 1975** through 1981, Engineering Manpower Commission

TABLE 7-16

BACHELORS DEGREES IN INDUSTRIAL ENGINEERING BY SEX, MINORITY GROUP AND CITIZENSHIP, 1975 – 1991

YEAR	ALL ENGINEERS	INDUS ENG.	%	WOMEN No.	%	BLACKS No.	%	HISPANICS No.	%	ASIAN No.	%	AM. INDIAN No.	%	FOREIGN No.	%
1975	38,210	2,096	5.5	62	3.0	34	1.6	42	2.0	31	1.5	0	0.0	--	--
1976	37,970	1,826	4.8	84	4.6	28	1.5	31	1.7	47	2.6	3	0.2	186	10.2
1977	40,095	1,805	4.5	114	6.3	29	1.6	43	2.4	38	2.1	1	0.1	208	11.5
1978	46,091	2,054	4.5	233	11.3	51	2.5	36	1.8	62	3.0	3	0.1	203	9.9
1979	52,598	2,433	4.6	363	14.9	58	2.4	59	2.4	52	2.1	3	0.1	236	9.7
1980	58,742	2,710	4.6	456	16.8	66	2.4	61	2.3	87	3.2	2	0.1	290	10.7
1981	62,935	3,225	5.1	623	19.3	77	2.4	127	3.9	81	2.5	3	0.1	313	9.7
1982	66,990	3,695	5.5	849	23.0	131	3.5	79	2.1	71	1.9	3	0.1	283	7.7
1983	72,471	3,808	5.3	996	26.2	159	4.2	155	4.1	112	2.9	5	0.1	374	9.8
1984	76,931	3,923	5.1	1,065	27.1	176	4.5	111	2.8	136	3.5	4	0.1	317	8.1
1985	77,892	4,321	5.5	1,219	31.1	159	3.7	108	2.8	168	4.3	6	0.2	319	8.1
1986	78,178	4,645	5.9	1,266	29.3	168	3.9	228	5.3	179	4.1	7	0.2	378	8.7
1987	75,735	4,572	6.0	1,384	30.3	190	4.2	233	5.1	181	4.0	3	0.1	369	8.1
1988	71,386	4,584	6.4	1,283	28.0	223	4.9	245	5.3	183	4.0	3	0.1	383	8.4
1989	68,824	4,519	6.6	1,304	28.9	195	4.3	263	5.8	229	5.1	12	0.3	378	8.4
1990	65,067	4,306	6.6	1,207	28.0	192	4.5	242	5.6	244	5.7	4	0.1	373	8.7
1991	63,986	3,690	5.8	1,054	28.6	212	5.7	225	6.1	270	7.3	11	0.3	287	7.8
TOTAL	1,054,101	58,212	5.5	13,562	23.3	2,148	3.7	2,288	3.9	2,171	3.7	73	0.1	4,897	8.4

TABLE 7-17

BACHELORS DEGREES IN MECHANICAL ENGINEERING BY SEX, MINORITY GROUP AND CITIZENSHIP, 1975 – 1991

YEAR	ALL ENGINEERS	MECH ENG.	%	WOMEN No.	%	BLACKS No.	%	HISPANICS No.	%	ASIAN No.	%	AM. INDIAN No.	%	FOREIGN No.	%
1975	38,210	7,076	18.5	85	1.2	150	2.1	113	1.6	130	1.8	9	0.1	--	--
1976	37,970	6,825	18.0	141	2.1	120	1.8	101	1.5	138	2.0	4	0.1	484	7.1
1977	40,095	7,549	18.8	242	3.2	163	2.2	90	1.2	182	2.4	7	0.1	534	7.1
1978	46,091	8,786	19.1	428	4.9	128	1.5	127	1.4	184	2.1	5	0.1	561	6.4
1979	52,598	10,076	19.2	593	5.9	225	2.2	152	1.5	243	2.4	18	0.2	602	6.0
1980	58,742	11,916	20.3	864	7.3	264	2.2	204	1.7	281	2.4	8	0.1	915	7.7
1981	62,935	13,462	21.4	1,070	7.9	322	2.4	259	1.9	414	3.1	18	0.1	1,092	8.1
1982	66,990	14,178	21.2	1,228	8.7	336	2.4	250	1.8	482	3.4	15	0.1	968	6.8
1983	72,471	16,484	22.7	1,503	9.1	397	2.4	338	2.1	562	3.4	21	0.1	1,182	7.2
1984	76,931	17,214	22.4	1,792	10.4	373	2.2	302	1.8	618	3.6	34	0.2	1,006	5.8
1985	77,892	17,152	22.0	1,812	10.5	401	2.3	352	2.0	691	4.0	29	0.2	976	5.7
1986	78,178	16,706	21.4	1,727	10.1	430	2.5	385	2.2	670	3.9	21	0.1	942	5.5
1987	75,735	16,056	21.2	1,724	10.7	383	2.4	488	3.0	701	4.4	28	0.2	855	5.3
1988	71,386	15,610	21.9	1,772	11.4	421	2.7	500	3.2	821	5.3	32	0.2	873	5.6
1989	68,824	15,369	22.3	1,682	10.9	377	2.5	522	3.4	898	5.8	55	0.4	935	6.1
1990	65,967	14,969	22.7	1,732	11.6	452	3.0	531	3.5	938	6.3	30	0.2	779	5.2
1991	63,986	14,626	22.9	1,599	10.9	461	3.2	595	4.1	991	6.8	39	0.3	722	4.9
TOTAL	1,055,001	224,054	21.2	19,994	8.9	5,403	2.4	5,309	2.4	8,944	4.0	373	0.2	13,426	6.0

SOURCE: Engineering and Technology Degrees reports, 1976–91, Engineering Manpower Commission

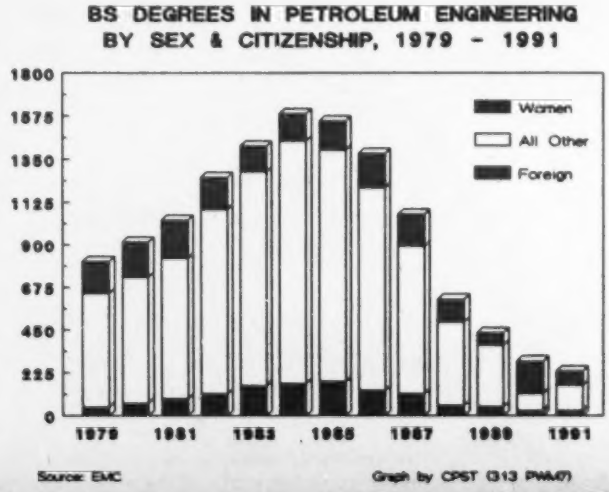
TABLE 7-18

DEGREES IN PETROLEUM ENGINEERING BY LEVEL, CITIZENSHIP, AND SEX, 1979 – 1991

	BACHELORS					MASTERS*					DOCTORS			
YEAR	Total	Foreign	%For	Women	%Wom	Total	Foreign	%For	Wom	%Wom	Total	Foreign	%For	Wom
1979	812	167	20.6	47	5.8	125	70	55.6	0	0.0	22	15	68.2	1
1980	915	186	20.3	67	7.3	134	73	54.2	6	4.6	21	15	71.4	0
1981	1,031	200	19.4	89	8.6	161	75	46.6	9	5.6	13	3	23.1	0
1982	1,256	167	13.3	117	9.3	147	55	38.0	6	4.2	23	8	34.8	0
1983	1,420	135	9.5	159	11.2	227	83	36.9	13	5.8	14	10	71.4	0
1984	1,587	142	8.9	170	10.7	260	75	28.8	15	5.8	11	3	27.3	0
1985	1,550	150	9.7	182	11.7	242	60	25.1	16	6.7	14	8	57.1	0
1986	1,381	177	12.8	133	9.6	249	75	30.4	22	8.9	18	11	61.1	1
1987	1,064	169	15.9	117	11.0	199	47	23.5	19	9.7	19	4	21.1	0
1988	612	119	19.4	53	8.7	220	51	22.7	17	7.9	38	14	36.8	2
1989	436	65	14.9	48	11.0	197	72	36.5	14	7.1	29	14	48.3	1
1990	286	168	58.7	29	10.1	162	73	45.1	20	12.3	54	32	59.3	0
1991	235	73	31.1	29	12.3	117	55	47.0	3	2.6	35	25	71.4	1
TOTAL	12,585	1,918	15.2	1,240	9.9	2,440	864	35.4	160	6.6	311	162	52.1	6

* Includes Engineer Degrees

CHART 7-4



FIELD: Engineering

SOURCE: Engineering and Technology Degrees, 1991, Engineering Manpower Commission

TABLE 7-19

LEADING SCHOOLS* IN NUMBER OF ENGINEERING DEGREES AWARDED TO WOMEN, 1991

SCHOOL	Bachelors			Masters#			PhDs			All Degrees		
	Total	Women	%W	Total	Women	%W	Total	Women	%W	Total	Women	%W
Mass Inst of Technology	633	180	28.4	610	103	16.9	232	35	15.1	1475	318	21.6
Georgia Inst of Tech	1131	211	18.7	514	60	11.7	103	5	4.9	1748	276	15.8
Purdue University	1105	206	18.6	409	63	15.4	128	6	4.7	1642	275	16.7
U Illinois–Champaign	1239	194	15.7	438	57	13.0	226	18	8.0	1903	269	14.1
Stanford University	282	60	21.3	818	161	19.7	222	37	16.7	1322	258	19.5
NC State Univ–Raleigh	1021	205	20.1	259	39	15.1	91	7	7.7	1371	251	18.3
U Michigan–Ann Arbor	788	161	20.4	545	71	13.0	165	15	9.1	1498	247	16.5
Johns Hopkins University	197	42	21.3	761	183	24.0	51	14	27.5	1009	239	23.7
U Cal–Berkeley	605	137	22.6	402	76	18.9	184	16	8.7	1191	229	19.2
Virginia Poly Institute	899	166	18.5	379	58	15.3	98	1	1.0	1376	225	16.4
Texas A&M University	1025	148	14.4	478	64	13.4	108	8	7.4	1611	220	13.7
Penn State University	1183	144	12.2	378	50	13.2	115	6	5.2	1676	200	11.9
Cornell University	598	125	20.9	317	47	14.8	137	16	11.7	1052	188	17.9
U Southern California	311	51	16.4	612	119	19.4	88	10	11.4	1011	180	17.8
U Washington	685	114	16.6	244	55	22.5	78	10	12.8	1007	179	17.8
U Minnesota	738	129	17.5	176	23	13.1	86	9	10.5	1000	161	16.1
U Maryland–College Park	636	117	18.4	242	34	14.0	57	4	7.0	935	155	16.6
U Puerto Rico	540	146	27.0	23	8	34.8	0	0		563	154	27.4
U Texas–Austin	667	101	15.1	371	45	12.1	142	8	5.6	1180	154	13.1
Ohio State University	673	100	14.9	319	41	12.9	118	10	8.5	1110	151	13.6
Michigan State University	559	122	21.8	147	17	11.6	31	2	6.5	737	141	19.1
Northeastern University	424	61	14.4	311	77	24.8	17	1	5.9	752	139	18.5
Rensselaer Polytechnic	609	78	12.8	306	57	18.6	77	4	5.2	992	139	14.0
U Florida	626	89	14.2	238	27	11.3	91	15	16.5	955	131	13.7
George Mason University	177	43	24.3	274	85	31.0	8	1	12.5	459	129	28.1
U Missouri–Rolla	598	106	17.7	219	20	9.1	46	3	6.5	863	129	14.9
Northwestern University	277	76	27.4	177	36	20.3	102	14	13.7	556	126	22.7
U Virginia	313	75	24.0	210	42	20.0	43	7	16.3	566	124	21.9
Rutgers University	452	80	17.7	137	29	21.2	57	12	21.1	646	121	18.7
U Colorado–Boulder	436	58	13.3	323	54	16.7	75	7	9.3	834	119	14.3
U Wisconsin–Madison	634	76	12.0	264	29	11.0	99	12	12.1	997	117	11.7
Cal State U–Long Beach	668	100	15.0	134	17	12.7	0	0		802	117	14.6
Michigan Tech University	682	102	15.0	79	13	16.5	15	1	6.7	776	116	14.9
Boston University	338	82	24.3	205	32	15.6	7	1	14.3	550	115	20.9
Columbia University	257	50	19.5	309	56	18.1	59	7	11.9	625	113	18.1
Lehigh University	400	79	19.8	153	27	17.6	55	7	12.7	608	113	18.6
George Washington Univ	101	16	15.8	477	93	19.5	37	4	10.8	615	113	18.4
Auburn University	605	92	15.2	141	19	13.5	24	1	4.2	770	112	14.5
U Cal–Los Angeles	336	72	21.4	211	28	13.3	93	9	9.7	640	109	17.0
GMI Engrg & Mgmt Inst	473	105	22.2	7	1	14.3	0	0		480	106	22.1
U Cal–San Diego	411	86	20.9	100	13	13.0	31	5	16.1	542	104	19.2
U Pennsylvania	287	55	19.2	157	37	23.6	62	11	17.7	506	103	20.4
Arizona State University	368	53	14.4	265	49	18.5	49	1	2.0	682	103	15.1
Cal Poly–San Luis Obispo	551	92	16.7	42	11	26.2	0	0		593	103	17.4
Polytechnic University	318	39	12.3	406	60	14.8	57	3	5.3	781	102	13.1
SUNY–Buffalo Campus	484	69	14.3	165	22	13.3	50	1	2.0	699	92	13.2
San Jose State University	359	57	15.9	199	34	17.1	0	0		558	91	16.3
U South Florida	340	65	19.1	143	22	15.4	9	4	44.4	492	91	18.5
Drexel University	485	67	13.8	171	22	12.9	29	1	3.4	685	90	13.1
Worcester Poly Institute	498	74	14.9	114	15	13.2	15	1	6.7	627	90	14.4
TOTAL TOP 50 SCHOOLS	28022	4956	17.7	14379	2401	16.7	3667	370	10.1	46068	7727	16.8
TOTAL ALL SCHOOLS	63986	10016	15.7	27754	4134	14.9	5680	551	9.7	97420	14701	15.1

* Of those that graduated 90 or more women in all degrees. # Includes Professional Engineer Degrees

FIELD: Engineering

SOURCE: Engineering and Technology Degrees, 1991, Engineering Manpower Commission

TABLE 7-20

LEADING SCHOOLS* IN PERCENT OF ENGINEERING DEGREES AWARDED TO WOMEN, 1991

SCHOOL	Bachelors			Masters#			PhDs			All Degrees		
	Total	Women	%W	Total	Women	%W	Total	Women	%W	Total	Women	%W
George Mason University	177	43	24.3	274	85	31.0	8	1	12.5	459	129	28.1
U Puerto Rico	540	146	27.0	23	8	34.8	0	0		563	154	27.4
Johns Hopkins University	197	42	21.3	761	183	24.0	51	14	27.5	1009	239	23.7
Northwestern University	277	76	27.4	177	36	20.3	102	14	13.7	556	126	22.7
GMI Engrg & Mgmt Inst	473	105	22.2	7	1	14.3	0	0		480	106	22.1
U Virginia	313	75	24.0	210	42	20.0	43	7	16.3	566	124	21.9
Mass Inst of Technology	633	180	28.4	610	103	16.9	232	35	15.1	1475	318	21.6
Boston University	338	82	24.3	205	32	15.6	7	1	14.3	550	115	20.9
U Pennsylvania	287	55	19.2	157	37	23.6	62	11	17.7	506	103	20.4
Stanford University	282	60	21.3	818	161	19.7	222	37	16.7	1322	258	19.5
U Cal–Berkeley	605	137	22.6	402	76	18.9	184	16	8.7	1191	229	19.2
U Cal–San Diego	411	86	20.9	100	13	13.0	31	5	16.1	542	104	19.2
Michigan State University	559	122	21.8	147	17	11.6	31	2	6.5	737	141	19.1
Rutgers University	452	80	17.7	137	29	21.2	57	12	21.1	646	121	18.7
Lehigh University	400	79	19.8	153	27	17.6	55	7	12.7	608	113	18.6
U South Florida	340	65	19.1	143	22	15.4	9	4	44.4	492	91	18.5
Northeastern University	424	61	14.4	311	77	24.8	17	1	5.9	752	139	18.5
George Washington Univ	101	16	15.8	477	93	19.5	37	4	10.8	615	113	18.4
NC State Univ–Raleigh	1021	205	20.1	259	39	15.1	91	7	7.7	1371	251	18.3
Columbia University	257	50	19.5	309	56	18.1	59	7	11.9	625	113	18.1
Cornell University	598	125	20.9	317	47	14.8	137	16	11.7	1052	188	17.9
U Southern California	311	51	16.4	612	119	19.4	88	10	11.4	1011	180	17.8
U Washington	685	114	16.6	244	55	22.5	78	10	12.8	1007	179	17.8
Cal Poly–San Luis Obispo	551	92	16.7	42	11	26.2	0	0		593	103	17.4
U Cal–Los Angeles	336	72	21.4	211	28	13.3	93	9	9.7	640	109	17.0
Purdue University	1105	206	18.6	409	63	15.4	128	6	4.7	1642	275	16.7
U Maryland–College Park	636	117	18.4	242	34	14.0	57	4	7.0	935	155	16.6
U Michigan–Ann Arbor	788	161	20.4	545	71	13.0	165	15	9.1	1498	247	16.5
Virginia Poly Institute	899	166	18.5	379	58	15.3	98	1	1.0	1376	225	16.4
San Jose State University	359	57	15.9	199	34	17.1	0	0		558	91	16.3
U Minnesota	738	129	17.5	176	23	13.1	86	9	10.5	1000	161	16.1
Georgia Inst of Tech	1131	211	18.7	514	60	11.7	103	5	4.9	1748	276	15.8
Arizona State University	368	53	14.4	265	49	18.5	49	1	2.0	682	103	15.1
Michigan Tech University	682	102	15.0	79	13	16.5	15	1	6.7	776	116	14.9
U Missouri–Rolla	598	106	17.7	219	20	9.1	46	3	6.5	863	129	14.9
Cal State U–Long Beach	668	100	15.0	134	17	12.7	0	0		802	117	14.6
Auburn University	605	92	15.2	141	19	13.5	24	1	4.2	770	112	14.5
Worcester Poly Institute	498	74	14.9	114	15	13.2	15	1	6.7	627	90	14.4
U Colorado–Boulder	436	58	13.3	323	54	16.7	75	7	9.3	834	119	14.3
U Illinois–Champaign	1239	194	15.7	438	57	13.0	226	18	8.0	1903	269	14.1
Rensselaer Polytechnic	609	78	12.8	306	57	18.6	77	4	5.2	992	139	14.0
U Florida	626	89	14.2	238	27	11.3	91	15	16.5	955	131	13.7
Texas A&M University	1025	148	14.4	478	64	13.4	108	8	7.4	1611	220	13.7
Ohio State University	673	100	14.9	319	41	12.9	118	10	8.5	1110	151	13.6
SUNY–Buffalo Campus	484	69	14.3	165	22	13.3	50	1	2.0	699	92	13.2
Drexel University	485	67	13.8	171	22	12.9	29	1	3.4	685	90	13.1
Polytechnic University	318	39	12.3	406	60	14.8	57	3	5.3	781	102	13.1
U Texas–Austin	667	101	15.1	371	45	12.1	142	8	5.6	1180	154	13.1
Penn State University	1183	144	12.2	378	50	13.2	115	6	5.2	1676	200	11.9
U Wisconsin–Madison	634	76	12.0	264	29	11.0	99	12	12.1	997	117	11.7
TOTAL TOP 50 SCHOOLS	28022	4956	17.7	14379	2401	16.7	3667	370	10.1	46068	7727	16.8
TOTAL ALL SHOOLS	63986	10016	15.7	27754	4134	14.9	5680	551	9.7	97420	14701	15.1

* Of those that graduated 90 or more womm in all degrees. # Includes Professional Engineer Degrees.

SOURCE: Engineering and Technology Degrees, 1991, Engineering Manpower Commission

TABLE 7-21

ENGINEERING SCHOOLS* RANKED BY PERCENT OF NON–ASIAN MINORITIES AMONG BS GRDUATES, 1991

SCHOOL	TOTAL	Black	Hispanic	Nat Amer	Sub Total	% Sub	Asian	Total Min	%Min
U Puerto Rico	540	0	538	0	538	99.6	0	538	99.6
Howard University	118	116	1	0	117	99.2	0	117	99.2
Tuskegee University	79	71	0	0	71	89.9	3	74	93.7
NC A&T State University	140	114	0	0	114	81.4	4	118	84.3
Southern University	100	80	0	0	80	80.0	0	80	80.0
Prairie View A&M Univ	112	78	1	0	79	70.5	20	99	88.4
Florida Intl University	138	6	73	0	79	57.2	14	93	67.4
Tennessee State Univ	78	38	0	0	38	48.7	5	43	55.1
Pratt Institute	119	41	13	0	54	45.4	19	73	61.3
U Texas–El Paso	173	0	75	0	75	43.4	6	81	46.8
CCNY (City College, CUNY)	307	65	31	2	98	31.9	88	186	60.6
Texas A&I University	155	2	43	0	45	29.0	10	55	35.5
NM State University	251	1	52	4	57	22.7	2	59	23.5
FAMU/FSU College of Engrg	146	21	10	0	31	21.2	9	40	27.4
U New Mexico	249	1	43	8	52	20.9	15	67	26.9
U Miami	194	2	37	0	39	20.1	9	48	24.7
NY Institute of Tech	202	28	12	0	40	19.8	29	69	34.2
Cal State U–Los Angeles	132	5	21	0	26	19.7	48	74	56.1
Stanford University	282	24	27	4	55	19.5	56	111	39.4
Florida Atlantic Univ	172	7	25	0	32	18.6	20	52	30.2
U Texas–San Antonio	69	0	12	0	12	17.4	4	16	23.2
New Jersey Inst Tech	334	21	37	0	58	17.4	45	103	30.8
San Francisco State Univ	93	5	9	1	15	16.1	24	39	41.9
Cal State U–Northridge	338	12	41	0	53	15.7	0	53	15.7
U Rhode Island	174	16	10	1	27	15.5	24	51	29.3
Mass Inst of Technology	633	43	53	2	98	15.5	97	195	30.8
Cal Poly–Pomona	518	9	61	2	72	13.9	229	301	58.1
Polytechnic University	318	19	24	0	43	13.5	102	145	45.6
Stevens Inst of Tech	195	8	17	0	25	12.8	32	57	29.2
Florida Institute of Tech	151	5	10	4	19	12.6	17	36	23.8
U Houston	181	3	17	2	22	12.2	40	62	34.3
Lamar University	158	10	9	0	19	12.0	29	48	30.4
San Diego State Univ	345	7	32	2	41	11.9	64	105	30.4
U Texas–Austin	667	16	62	1	79	11.8	79	158	23.7
U New Orleans	94	5	6	0	11	11.7	15	26	27.7
Princeton University	172	13	6	1	20	11.6	26	46	26.7
U Cal–Los Angeles	336	9	28	1	38	11.3	150	188	56.0
Widener University	119	12	1	0	13	10.9	3	16	13.4
U South Florida	340	16	20	1	37	10.9	46	83	24.4
US Air Force Academy	235	17	7	1	25	10.6	9	34	14.5
U Detroit	85	7	2	0	9	10.6	7	16	18.8
Texas A&M University	1025	24	79	0	103	10.0	54	157	15.3
George Washington Univ	101	5	4	1	10	9.9	40	50	49.5
U Cal–Berkeley	605	17	41	0	58	9.6	274	332	54.9
Mississippi State Univ	324	31	0	0	31	9.6	12	43	13.3
San Jose State University	359	9	22	3	34	9.5	139	173	48.2
Cal State U–Long Beach	668	24	36	3	63	9.4	174	237	35.5
U Florida	626	14	45	0	59	9.4	30	89	14.2
Georgia Inst of Tech	1131	69	33	4	106	9.4	74	180	15.9
U Illinois–Chicago	363	8	26	0	34	9.4	0	34	9.4
Total above 50 schools	**14444**	**1154**	**1752**	**48**	**2954**	**20.5**	**2196**	**5150**	**35.7**
Total all schools	**63986**	**2304**	**2663**	**146**	**5113**	**8.0**	**6302**	**11415**	**17.8**

Field: Engineering
SOURCE: Engineering and Technology Degrees, 1991, Engineering Manpower Commission

TABLE 7-22

LEADING SCHOOLS* IN PRODUCTION OF BLACK BS GRADUATES, 1991

Ranked by NUMBER of degrees				Ranked by PERCENT of degrees			
SCHOOL	TOTAL	No. Bl.	%	SCHOOL	TOTAL	No. Bl.	%
Howard University	118	116	98.3	Hampton University	14	14	100.0
NC A&T State University	140	114	81.4	Howard University	118	116	98.3
Southern University	100	80	80.0	Tuskegee University	79	71	89.9
NC State Univ–Raleigh	1021	79	7.7	NC A&T State University	140	114	81.4
Prairie View A&M Univ	112	78	69.6	Southern University	100	80	80.0
Tuskegee University	79	71	89.9	Morgan State University	46	33	71.7
Georgia Inst of Tech	1131	69	6.1	Prairie View A&M Univ	112	78	69.6
CCNY (City College, CUNY)	307	65	21.2	U District of Columbia	40	22	55.0
Mass Inst of Technology	633	43	6.8	Tennessee State Univ	78	38	48.7
Pratt Institute	119	41	34.5	Pratt Institute	119	41	34.5
Tennessee State Univ	78	38	48.7	CCNY (City College, CUNY)	307	65	21.2
Morgan State University	46	33	71.7	FAMU/FSU College of Engrg	146	21	14.4
Mississippi State Univ	324	31	9.6	NY Institute of Tech	202	28	13.9
U Maryland–College Park	636	31	4.9	Widener University	119	12	10.1
NY Institute of Tech	202	28	13.9	Mississippi State Univ	324	31	9.6
U Illinois–Champaign	1239	25	2.0	U Rhode Island	174	16	9.2
Cal State U–Long Beach	668	24	3.6	Northwestern University	277	24	8.7
Northwestern University	277	24	8.7	Stanford University	282	24	8.5
Texas A&M University	1025	24	2.3	U Delaware	200	16	8.0
Stanford University	282	24	8.5	NC State Univ–Raleigh	1021	79	7.7
Michigan State University	559	23	4.1	Princeton University	172	13	7.6
GMI Engrg & Mgmt Inst	473	22	4.7	U Alabama	215	16	7.4
U District of Columbia	40	22	55.0	US Air Force Academy	235	17	7.2
Purdue University	1105	21	1.9	Mass Inst of Technology	633	43	6.8
FAMU/FSU College of Engrg	146	21	14.4	New Jersey Inst Tech	334	21	6.3
New Jersey Inst Tech	334	21	6.3	Georgia Inst of Tech	1131	69	6.1
Clemson University	457	20	4.4	Polytechnic University	318	19	6.0
Virginia Poly Institute	899	20	2.2	U Louisville	206	12	5.8
Polytechnic University	318	19	6.0	Louisiana State Univ	242	14	5.8
U Michigan–Ann Arbor	788	19	2.4	U Tennessee–Knoxville	354	19	5.4
U Tennessee–Knoxville	354	19	5.4	U Maryland–College Park	636	31	4.9
U Missouri–Rolla	598	17	2.8	U South Florida	340	16	4.7
Ohio State University	673	17	2.5	GMI Engrg & Mgmt Inst	473	22	4.7
Drexel University	485	17	3.5	Clemson University	457	20	4.4
US Air Force Academy	235	17	7.2	Michigan State University	559	23	4.1
U Cal–Berkeley	605	17	2.8	U Virginia	313	12	3.8
Auburn University	605	17	2.8	U Pittsburgh	325	12	3.7
U Delaware	200	16	8.0	Lawrence Technological U	382	14	3.7
U Rhode Island	174	16	9.2	Cal State U–Long Beach	668	24	3.6
U South Florida	340	16	4.7	Cal State U–Northridge	338	12	3.6
U Texas–Austin	667	16	2.4	Drexel University	485	17	3.5
U Alabama	215	16	7.4	U Cincinnati	360	12	3.3
Hampton University	14	14	100.0	U Missouri–Rolla	598	17	2.8
U Florida	626	14	2.2	Northeastern University	424	12	2.8
Louisiana State Univ	242	14	5.8	Auburn University	605	17	2.8
Lawrence Technological U	382	14	3.7	U Cal–Berkeley	605	17	2.8
Penn State University	1183	13	1.1	Ohio State University	673	17	2.5
Princeton University	172	13	7.6	U Michigan–Ann Arbor	788	19	2.4
Widener University	119	12	10.1	U Texas–Austin	667	16	2.4
U Virginia	313	12	3.8	Texas A&M University	1025	24	2.3
Total Above 50 Schools	**21858**	**1553**	**7.1**	**Total Above 50 Schools**	**18459**	**1520**	**8.2**
Total All Schools	**63986**	**2304**	**3.6**	**Total All Schools**	**63986**	**2304**	**3.6**

FIELD: Engineering

SOURCE: Engineering and Technology Degrees, 1991, Engineering Manpower Commission

TABLE 7-23

LEADING SCHOOLS* IN PRODUCTION OF HISPANIC BS GRADUATES, 1991

Ranked by NUMBER of degrees				Ranked by PERCENT of degrees			
SCHOOL	TOTAL	No. Hisp	%	SCHOOL	TOTAL	No. Hisp	%
U Puerto Rico	540	538	99.6	U Puerto Rico	540	538	99.6
Texas A&M University	1025	79	7.7	Florida Intl University	138	73	52.9
U Texas–El Paso	173	75	43.4	U Texas–El Paso	173	75	43.4
Florida Intl University	138	73	52.9	Texas A&I University	155	43	27.7
U Texas–Austin	667	62	9.3	Loyola Marymount Univ	39	10	25.6
Cal Poly–Pomona	518	61	11.8	NM State University	251	52	20.7
Mass Inst of Technology	633	53	8.4	U Miami	194	37	19.1
NM State University	251	52	20.7	U Texas–San Antonio	69	12	17.4
U Florida	626	45	7.2	U New Mexico	249	43	17.3
Texas A&I University	155	43	27.7	Cal State U–Los Angeles	132	21	15.9
U New Mexico	249	43	17.3	Florida Atlantic Univ	172	25	14.5
Cal State U–Northridge	338	41	12.1	Cal State U–Northridge	338	41	12.1
U Cal–Berkeley	605	41	6.8	Cal Poly–Pomona	518	61	11.8
U Miami	194	37	19.1	New Jersey Inst Tech	334	37	11.1
New Jersey Inst Tech	334	37	11.1	Pratt Institute	119	13	10.9
Cal State U–Long Beach	668	36	5.4	CCNY (City College, CUNY)	307	31	10.1
Georgia Inst of Tech	1131	33	2.9	Stanford University	282	27	9.6
San Diego State Univ	345	32	9.3	U Houston	181	17	9.4
CCNY (City College, CUNY)	307	31	10.1	U Texas–Austin	667	62	9.3
Cal Poly–San Luis Obispo	551	31	5.6	San Diego State Univ	345	32	9.3
U Cal–Los Angeles	336	28	8.3	Stevens Inst of Tech	195	17	8.7
Stanford University	282	27	9.6	Mass Inst of Technology	633	53	8.4
U Cal–Davis	353	27	7.6	U Cal–Los Angeles	336	28	8.3
U Illinois–Champaign	1239	27	2.2	Cal State U–Fresno	180	15	8.3
U Illinois–Chicago	363	26	7.2	Texas A&M University	1025	79	7.7
Florida Atlantic Univ	172	25	14.5	U Cal–Davis	353	27	7.6
Polytechnic University	318	24	7.5	Polytechnic University	318	24	7.5
U Arizona	434	24	5.5	U Florida	626	45	7.2
Cornell University	598	24	4.0	U Illinois–Chicago	363	26	7.2
San Jose State University	359	22	6.1	FAMU/FSU College of Engrg	146	10	6.8
Cal State U–Los Angeles	132	21	15.9	U Cal–Berkeley	605	41	6.8
U Cal–San Diego	411	21	5.1	Florida Institute of Tech	151	10	6.6
U South Florida	340	20	5.9	Columbia University	257	17	6.6
Rensselaer Polytechnic	609	20	3.3	San Jose State University	359	22	6.1
Cal State U–Sacramento	334	19	5.7	NY Institute of Tech	202	12	5.9
Arizona State University	368	19	5.2	U South Florida	340	20	5.9
U Houston	181	17	9.4	U Rhode Island	174	10	5.7
Stevens Inst of Tech	195	17	8.7	Cal State U–Sacramento	334	19	5.7
Columbia University	257	17	6.6	Cal Poly–San Luis Obispo	551	31	5.6
U Central Florida	335	17	5.1	U Cal–Irvine	214	12	5.6
Rutgers University	452	17	3.8	U Arizona	434	24	5.5
U Maryland–College Park	636	17	2.7	Cal State U–Long Beach	668	36	5.4
U Colorado–Boulder	436	16	3.7	Arizona State University	368	19	5.2
U Washington	685	16	2.3	U Cal–San Diego	411	21	5.1
Purdue University	1105	16	1.4	U Central Florida	335	17	5.1
Cal State U–Fresno	180	15	8.3	Boston University	338	15	4.4
Boston University	338	15	4.4	US Naval Academy	344	15	4.4
US Naval Academy	344	15	4.4	Colorado School of Mines	269	11	4.1
Pratt Institute	119	13	10.9	Cornell University	598	24	4.0
U Texas–San Antonio	69	12	17.4	US Military Academy	289	11	3.8
Total above 50 Schools	**21428**	**2037**	**9.5**	**Total above 50 Schools**	**16619**	**1961**	**11.8**
Total All Schools	**63986**	**2663**	**4.2**	**Total All Schools**	**63986**	**2663**	**4.2**

* With 12 or more Hispanic BS graduates

FIELD: Engineering
SOURCE: Engineering and Technology Degrees, 1991, Engineering Manpower Commission

TABLE 7-24

LEADING SCHOOLS* IN PRODUCTION OF ASIAN BS GRADUATES, 1991

Ranked by NUMBER of degrees				Ranked by PERCENT of degrees			
SCHOOL	TOTAL	No. As.	%	SCHOOL	TOTAL	No. As.	%
U Cal–Berkeley	605	274	45.3	U Hawaii	156	119	76.3
Cal Poly–Pomona	518	229	44.2	U Cal–Berkeley	605	274	45.3
U Washington	685	195	28.5	U Cal–Los Angeles	336	150	44.6
Cal State U–Long Beach	668	174	26.0	U Cal–Irvine	214	95	44.4
U Cal–Los Angeles	336	150	44.6	Cal Poly–Pomona	518	229	44.2
U Illinois–Champaign	1239	142	11.5	George Washington Univ	101	40	39.6
U Maryland–College Park	636	141	22.2	San Jose State University	359	139	38.7
San Jose State University	359	139	38.7	U Cal–Davis	353	133	37.7
U Cal–Davis	353	133	37.7	Cal State U–Fullerton	173	64	37.0
U Hawaii	156	119	76.3	Cal State U–Los Angeles	132	48	36.4
Cornell University	598	110	18.4	Cal State U–Sacramento	334	108	32.3
Cal State U–Sacramento	334	108	32.3	Polytechnic University	318	102	32.1
U Cal–San Diego	411	105	25.5	Columbia University	257	76	29.6
Polytechnic University	318	102	32.1	U Southern California	311	91	29.3
Cal Poly–San Luis Obispo	551	99	18.0	CCNY (City College, CUNY)	307	88	28.7
Mass Inst of Technology	633	97	15.3	U Washington	685	195	28.5
U Cal–Irvine	214	95	44.4	Cal State U–Long Beach	668	174	26.0
U Southern California	311	91	29.3	U Cal–San Diego	411	105	25.5
CCNY (City College, CUNY)	307	88	28.7	George Mason University	177	45	25.4
U Texas–Austin	667	79	11.8	Cal State U–Fresno	180	45	25.0
U Michigan–Ann Arbor	788	79	10.0	SUNY–Stony Brook Campus	171	42	24.6
Columbia University	257	76	29.6	U Texas–Arlington	319	76	23.8
U Texas–Arlington	319	76	23.8	U Cal–Santa Barbara	194	44	22.7
Virginia Poly Institute	899	76	8.5	U Maryland–College Park	636	141	22.2
Georgia Inst of Tech	1131	74	6.5	U Houston	181	40	22.1
Drexel University	485	69	14.2	Illinois Inst of Tech	231	47	20.3
Rutgers University	452	68	15.0	Stanford University	282	56	19.9
Cal State U–Fullerton	173	64	37.0	San Diego State Univ	345	64	18.6
San Diego State Univ	345	64	18.6	Cornell University	598	110	18.4
Rensselaer Polytechnic	609	57	9.4	Cal Poly–San Luis Obispo	551	99	18.0
Stanford University	282	56	19.9	Northwestern University	277	47	17.0
Boston University	338	55	16.3	Boston University	338	55	16.3
Texas A&M University	1025	54	5.3	Mass Inst of Technology	633	97	15.3
Cal State U–Los Angeles	132	48	36.4	Rutgers University	452	68	15.0
U Minnesota	738	48	6.5	U Pennsylvania	287	41	14.3
Illinois Inst of Tech	231	47	20.3	Drexel University	485	69	14.2
Northwestern University	277	47	17.0	U South Florida	340	46	13.5
Purdue University	1105	47	4.3	New Jersey Inst Tech	334	45	13.5
U South Florida	340	46	13.5	U Texas–Austin	667	79	11.8
NC State Univ–Raleigh	1021	46	4.5	U Illinois–Champaign	1239	142	11.5
George Mason University	177	45	25.4	U Michigan–Ann Arbor	788	79	10.0
Cal State U–Fresno	180	45	25.0	Rensselaer Polytechnic	609	57	9.4
New Jersey Inst Tech	334	45	13.5	Virginia Poly Institute	899	76	8.5
Ohio State University	673	45	6.7	Ohio State University	673	45	6.7
U Cal–Santa Barbara	194	44	22.7	Georgia Inst of Tech	1131	74	6.5
SUNY–Stony Brook Campus	171	42	24.6	U Minnesota	738	48	6.5
Penn State University	1183	42	3.6	Texas A&M University	1025	54	5.3
U Pennsylvania	287	41	14.3	NC State Univ–Raleigh	1021	46	4.5
George Washington Univ	101	40	39.6	Purdue University	1105	47	4.3
U Houston	181	40	22.1	Penn State University	1183	42	3.6
Total Above 50 Schools	**24327**	**4296**	**17.7**	**Total Above 50 Schools**	**24327**	**4296**	**17.7**
Total All Schools	**63986**	**6302**	**9.8**	**Total All Schools**	**63986**	**6302**	**9.8**

* With 40 or more Asian BS graduates.

Field: Engineering

SOURCE: Engineering and Technology Degrees, 1991, Engineering Manpower Commission

TABLE 7-25

LEADING SCHOOLS* IN NUMBER OF FOREIGN NATIONAL ENGINERING DEGREES, 1991

SCHOOL	Bachelors			Masters+			PhDs			All Degrees		
	Total	Foreign	%F	Total	Foreign	%F	Total	Foreign	%F	Total	Foreign	%F
U Southern California	311	82	26.4	612	275	44.9	88	60	68.2	1011	417	41.2
Mass Inst of Technology	633	65	10.3	610	173	28.4	232	105	45.3	1475	343	23.3
U Michigan–Ann Arbor	788	27	3.4	545	204	37.4	165	102	61.8	1498	333	22.2
New Jersey Inst Tech	334	15	4.5	465	300	64.5	13	9	69.2	812	324	39.9
Stanford University	282	16	5.7	818	226	27.6	222	78	35.1	1322	320	24.2
U Texas–Austin	667	88	13.2	371	143	38.5	142	80	56.3	1180	311	26.4
Ohio State University	673	47	7.0	319	152	47.6	118	74	62.7	1110	273	24.6
Texas A&M University	1025	46	4.5	478	135	28.2	108	58	53.7	1611	239	14.8
U Wisconsin–Madison	634	49	7.7	264	132	50.0	99	45	45.5	997	226	22.7
Georgia Inst of Tech	1131	34	3.0	514	134	26.1	103	53	51.5	1748	221	12.6
U Cal–Berkeley	605	23	3.8	402	107	26.6	184	84	45.7	1191	214	18.0
Purdue University	1105	43	3.9	409	84	20.5	128	77	60.2	1642	204	12.4
Columbia University	257	42	16.3	309	118	38.2	59	39	66.1	625	199	31.8
U Arizona	434	93	21.4	175	67	38.3	62	39	62.9	671	199	29.7
Polytechnic University	318	32	10.1	406	131	32.3	57	26	45.6	781	189	24.2
Northeastern University	424	65	15.3	311	109	35.0	17	14	82.4	752	188	25.0
U Maryland–College Park	636	40	6.3	242	107	44.2	57	40	70.2	935	187	20.0
Cornell University	598	23	3.8	317	105	33.1	137	57	41.6	1052	185	17.6
Arizona State University	368	48	13.0	265	103	38.9	49	32	65.3	682	183	26.8
Penn State University	1183	11	0.9	378	103	27.2	115	62	53.9	1676	176	10.5
Syracuse University	187	7	3.7	291	130	44.7	42	35	83.3	520	172	33.1
U Florida	626	28	4.5	238	86	36.1	91	56	61.5	955	170	17.8
SUNY–Buffalo Campus	484	54	11.2	165	84	50.9	50	31	62.0	699	169	24.2
Virginia Poly Institute	899	22	2.4	379	90	23.7	98	56	57.1	1376	168	12.2
Oklahoma State Univ	208	61	29.3	143	83	58.0	31	23	74.2	382	167	43.7
Case Western Reserve Ur	243	57	23.5	159	77	48.4	59	33	55.9	461	167	36.2
CCNY (City College, CUN	307	65	21.2	158	90	57.0	22	12	54.5	487	167	34.3
U Missouri–Columbia & K	399	26	6.5	166	120	72.3	16	14	87.5	581	160	27.5
Wayne State University	146	0	0.0	208	144	69.2	16	15	93.8	370	159	43.0
Iowa State University	703	56	8.0	163	67	41.1	44	30	68.2	910	153	16.8
U Oklahoma	318	64	20.1	113	65	57.5	30	19	63.3	461	148	32.1
U Texas–Arlington	319	42	13.2	235	93	39.6	28	11	39.3	582	146	25.1
U Illinois–Champaign	1239	8	0.6	438	66	15.1	226	62	27.4	1903	136	7.1
Boston University	338	71	21.0	205	60	29.3	7	3	42.9	550	134	24.4
George Washington Univ	101	31	30.7	477	86	18.0	37	17	45.9	615	134	21.8
Rensselaer Polytechnic	609	24	3.9	306	64	20.9	77	46	59.7	992	134	13.5
Northwestern University	277	18	6.5	177	52	29.4	102	62	60.8	556	132	23.7
NC State Univ–Raleigh	1021	18	1.8	259	64	24.7	91	49	53.8	1371	131	9.6
U Toledo	233	90	38.6	63	31	49.2	17	8	47.1	313	129	41.2
Lamar University	158	55	34.8	127	70	55.1	2	2	100.0	287	127	44.3
U Miami	194	77	39.7	52	31	59.6	18	16	88.9	264	124	47.0
Rutgers University	452	32	7.1	137	63	46.0	57	28	49.1	646	123	19.0
U Minnesota	738	26	3.5	176	52	29.5	86	45	52.3	1000	123	12.3
Cal State U–Long Beach	668	98	14.7	134	23	17.2	0	0		802	121	15.1
U Colorado–Boulder	436	22	5.0	323	68	21.1	75	30	40.0	834	120	14.4
Michigan State University	559	15	2.7	147	79	53.7	31	25	80.6	737	119	16.1
U Cal–Los Angeles	336	19	5.7	211	53	25.1	93	42	45.2	640	114	17.8
U Washington	685	26	3.8	244	50	20.5	78	37	47.4	1007	113	11.2
U Pennsylvania	287	47	16.4	157	33	21.0	62	28	45.2	506	108	21.3
Lehigh University	400	24	6.0	153	53	34.6	55	31	56.4	608	108	17.8
Total Above 50 Schools	25976	2072	8.0	14414	5035	34.9	3796	2000	52.7	44186	9107	20.6
Total All Schools	63986	4540	7.1	27754	8262	29.8	5680	2898	51.0	97420	15700	16.1

+ Includes Professional Engineer Degrees. * Of those that graduated 108 or more foreign students in all degrees.

SOURCE: Engineering and Technology Degrees, 1991, Engineering Manpower Commission

TABLE 7-26

LEADING SCHOOLS* IN PERCENT OF FOREIGN NATIONAL ENGINERING DEGREES, 1991

SCHOOL	Bachelors			Masters+			PhDs			All Degrees		
	Total	Foreign	%F	Total	Foreign	%F	Total	Foreign	%F	Total	Foreign	%F
U Miami	194	77	39.7	52	31	59.6	18	16	88.9	264	124	47.0
Lamar University	158	55	34.8	127	70	55.1	2	2	100.0	287	127	44.3
Oklahoma State Univ	208	61	29.3	143	83	58.0	31	23	74.2	382	167	43.7
Wayne State University	146	0	0.0	208	144	69.2	16	15	93.8	370	159	43.0
U Southern California	311	82	26.4	612	275	44.9	88	60	68.2	1011	417	41.2
U Toledo	233	90	38.6	63	31	49.2	17	8	47.1	313	129	41.2
New Jersey Inst Tech	334	15	4.5	465	300	64.5	13	9	69.2	812	324	39.9
Case Western Reserve Ur	243	57	23.5	159	77	48.4	59	33	55.9	461	167	36.2
CCNY (City College, CUN	307	65	21.2	158	90	57.0	22	12	54.5	487	167	34.3
Syracuse University	187	7	3.7	291	130	44.7	42	35	83.3	520	172	33.1
U Oklahoma	318	64	20.1	113	65	57.5	30	19	63.3	461	148	32.1
Columbia University	257	42	16.3	309	118	38.2	59	39	66.1	625	199	31.8
U Arizona	434	93	21.4	175	67	38.3	62	39	62.9	671	199	29.7
U Missouri–Columbia & I	399	26	6.5	166	120	72.3	16	14	87.5	581	160	27.5
Arizona State University	368	48	13.0	265	103	38.9	49	32	65.3	682	183	26.8
U Texas–Austin	667	88	13.2	371	143	38.5	142	80	56.3	1180	311	26.4
U Texas–Arlington	319	42	13.2	235	93	39.6	28	11	39.3	582	146	25.1
Northeastern University	424	65	15.3	311	109	35.0	17	14	82.4	752	188	25.0
Ohio State University	673	47	7.0	319	152	47.6	118	74	62.7	1110	273	24.6
Boston University	338	71	21.0	205	60	29.3	7	3	42.9	550	134	24.4
Stanford University	282	16	5.7	818	226	27.6	222	78	35.1	1322	320	24.2
Polytechnic University	318	32	10.1	406	131	32.3	57	26	45.6	781	189	24.2
SUNY–Buffalo Campus	484	54	11.2	165	84	50.9	50	31	62.0	699	169	24.2
Northwestern University	277	18	6.5	177	52	29.4	102	62	60.8	556	132	23.7
Mass Inst of Technology	633	65	10.3	610	173	28.4	232	105	45.3	1475	343	23.3
U Wisconsin–Madison	634	49	7.7	264	132	50.0	99	45	45.5	997	226	22.7
U Michigan–Ann Arbor	788	27	3.4	545	204	37.4	165	102	61.8	1498	333	22.2
George Washington Univ	101	31	30.7	477	86	18.0	37	17	45.9	615	134	21.8
U Pennsylvania	287	47	16.4	157	33	21.0	62	28	45.2	506	108	21.3
U Maryland–College Park	636	40	6.3	242	107	44.2	57	40	70.2	935	187	20.0
Rutgers University	452	32	7.1	137	63	46.0	57	28	49.1	646	123	19.0
U Cal–Berkeley	605	23	3.8	402	107	26.6	184	84	45.7	1191	214	18.0
U Cal–Los Angeles	336	19	5.7	211	53	25.1	93	42	45.2	640	114	17.8
U Florida	626	28	4.5	238	86	36.1	91	56	61.5	955	170	17.8
Lehigh University	400	24	6.0	153	53	34.6	55	31	56.4	608	108	17.8
Cornell University	598	23	3.8	317	105	33.1	137	57	41.6	1052	185	17.6
Iowa State University	703	56	8.0	163	67	41.1	44	30	68.2	910	153	16.8
Michigan State University	559	15	2.7	147	79	53.7	31	25	80.6	737	119	16.1
Cal State U–Long Beach	668	98	14.7	134	23	17.2	0	0		802	121	15.1
Texas A&M University	1025	46	4.5	478	135	28.2	108	58	53.7	1611	239	14.8
U Colorado–Boulder	436	22	5.0	323	68	21.1	75	30	40.0	834	120	14.4
Rensselaer Polytechnic	609	24	3.9	306	64	20.9	77	46	59.7	992	134	13.5
Georgia Inst of Tech	1131	34	3.0	514	134	26.1	103	53	51.5	1748	221	12.6
Purdue University	1105	43	3.9	409	84	20.5	128	77	60.2	1642	204	12.4
U Minnesota	738	26	3.5	176	52	29.5	86	45	52.3	1000	123	12.3
Virginia Poly Institute	899	22	2.4	379	90	23.7	98	56	57.1	1376	168	12.2
U Washington	685	26	3.8	244	50	20.5	78	37	47.4	1007	113	11.2
Penn State University	1183	11	0.9	378	103	27.2	115	62	53.9	1676	176	10.5
NC State Univ–Raleigh	1021	18	1.8	259	64	24.7	91	49	53.8	1371	131	9.6
U Illinois–Champaign	1239	8	0.6	438	66	15.1	226	62	27.4	1903	136	7.1
Total Above 50 Schools	25976	2072	8.0	14414	5035	34.9	3796	2000	52.7	44186	9107	20.6
Total All Schools	63986	4540	7.1	27754	8262	29.8	5680	2898	51.0	97420	15700	16.1

+ Includes Professional Engineer Degrees. * Of those that graduated 108 or more foreign students in all degrees.

Field: Engineering

Source: Digest of Education Statistics 1977–1989; Fall Enrollment in Colleges and Universites, 1989, National Center for Education Statistics, Engineering Enrollment Series, Fall 1970–90, Engineering Manpower Commission

TABLE 7-27

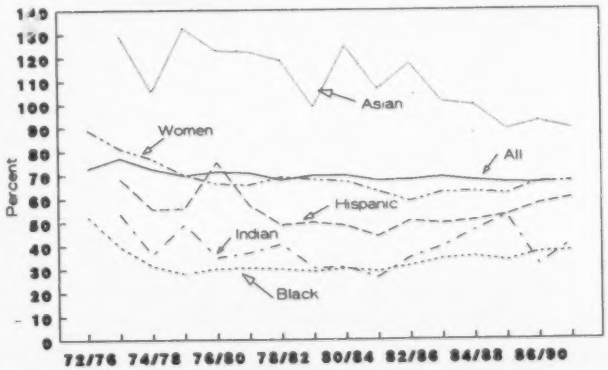
ENGINEERING ENROLLMENTS RELATED TO HIGH SCHOOL GRADUATES, ENTERING FRESHMEN AND TOTAL ENROLLMENTS, BY SEX, SELECTED YEARS 1970 – 1990

	H.S. GRADUATES			FIRST TIME ENROLLMENT						TOTAL ENROLLMENT*						% of H.S.Grads Enrolled in College the Next October			Engineering as % of First Time Enrollment			Engineering as % of Total Enrollment		
				All Fields			Engineering			All Fields			Engineering												
YEAR	Men	Women	%W	Men	Wom	%W	Men	Wom	%W	Men	Wom	%W	Men	Wom	%W	Men	Wom	Both	Men	Wom	Both	Men	Wom	Both
1970	1,433	1,463	50.5	984	796	44.7	70.2	1.5	2.0	5,044	3,497	40.9	314.3	4.7	1.5	55.2	48.5	51.8	7.1	0.2	4.0	6.2	0.1	3.7
1973	1,602	1,609	50.1	931	826	47.0	49.5	2.4	4.7	5,371	4,231	44.1	255.3	7.7	2.9	58.1	51.3	54.7	5.3	0.3	3.0	4.8	0.2	2.7
1975	1,541	1,599	50.9	992	918	48.1	68.6	6.7	8.9	6,149	5,036	45.0	293.0	19.9	6.4	64.4	57.4	60.8	6.9	0.7	3.9	4.8	0.4	2.8
1977	1,548	1,606	50.9	1,172	1,259	51.8	78.9	9.9	11.2	5,789	5,497	48.7	340.3	33.9	9.1	75.7	78.4	77.1	6.7	0.8	3.7	5.9	0.6	3.3
1979	1,532	1,602	51.1	1,195	1,344	52.9	89.7	14.0	13.5	5,683	5,887	50.9	383.9	49.6	11.4	78.0	83.8	81.0	7.5	1.0	4.1	6.8	0.8	3.7
1980	1,355	1,401	50.8	1,233	1,392	53.0	94.1	16.0	14.5	5,874	6,223	51.4	411.7	58.2	12.4	91.0	99.3	95.2	7.6	1.2	4.2	7.0	0.9	3.9
1981	1,340	1,385	50.8	1,218	1,378	53.1	97.0	18.2	15.8	5,975	6,397	51.7	431.2	66.8	13.4	90.9	99.5	95.3	8.0	1.3	4.4	7.2	1.0	4.0
1982	1,474	1,527	50.9	1,199	1,306	52.1	96.1	19.2	16.6	5,981	6,377	51.6	441.9	75.4	14.6	81.4	85.5	83.5	8.0	1.5	4.6	7.4	1.2	4.2
1983	1,451	1,465	50.2	1,159	1,285	52.6	90.9	18.7	17.0	6,024	6,441	51.7	452.8	79.4	14.9	79.9	87.7	83.8	7.8	1.5	4.5	7.5	1.2	4.3
1985	1,429	1,583	52.6	1,112	1,245	52.8	87.9	17.0	16.5	5,864	6,378	52.1	444.9	77.7	14.9	77.8	78.6	78.3	7.9	1.4	4.5	7.6	1.2	4.3
1986	1,286	1,380	51.8	1,076	1,216	53.1	86.2	17.0	16.5	5,818	6,429	52.5	438.3	78.1	15.1	83.6	88.2	86.0	8.0	1.4	4.5	7.5	1.2	4.2
1987	1,331	1,455	52.2	1,045	1,169	52.8	84.1	15.0	15.3	5,885	6,615	52.9	428.9	74.2	14.7	78.5	80.3	79.5	8.0	1.3	4.5	7.3	1.1	4.0
1988	1,189	1,304	52.3	1,047	1,200	53.4	82.2	15.8	16.2	5,932	6,836	53.1	421.7	75.7	15.2	88.1	92.0	90.1	7.8	1.3	4.4	7.2	1.1	3.9
1989	1,176	1,290	52.3	1,100	1,277	53.7	79.9	15.5	16.3	5,998	7,045	54.0	416.3	76.0	15.4	93.5	99.0	96.4	7.3	1.2	4.0	6.9	1.1	3.8
1990	1099	1210	52.4				77.7	16.7	17.7				419.7	78.4	15.7									

Note: All data except for percentages are in thousands. * Includes graduate students and part–time students.

RETENTION RATES OF FRESHMEN ENGINEERS, 1972/76 – 1987/91

CHART 7-5

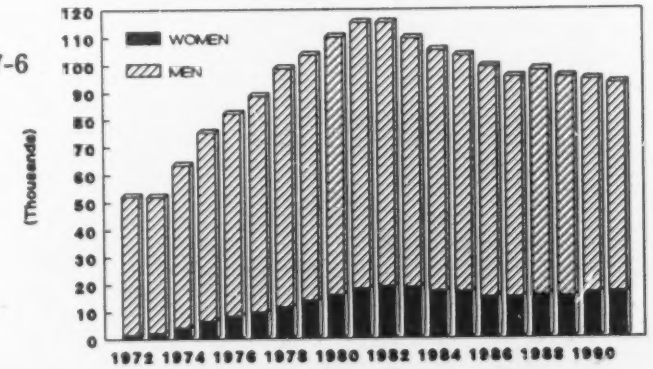


Source: EMC

Graph by CPST 020 12-ASI

FRESHMAN ENROLLMENT IN ENGINEERING 1972 – 1991

CHART 7-6



Source: EMC

Graph by CPST 603A 12-ASI

Source: Engineering Manpower Commission

TABLE 7-28

ENGINEERING ENROLLMENTS, FALL 1991

	UNDERGRADUATE STUDENTS			GRADUATE STUDENTS			
		All Years		MS/PE	PhD	All Grad Students	
	1st Year	Full time	Part time	Degree	Degree	Full time	Part time
All Students	93,002	339,397	40,580	43,243	31,325	74,568	48,929
Women	16,984	57,656	5,880	6,394	3,868	10,262	7,298
Black	8,306	21,891	2,672	810	364	1,174	1,101
Hispanic	5,949	20,030	2,411	975	381	1,356	1,056
Nat. American	582	1,538	150	86	30	116	117
Asian	8,212	33,584	4,219	2,833	1,818	4,651	4,517
Foreign Nat.	4,394	19,839	1,737	17,352	16,096	33,448	8,101
				Percent			
All Students	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Women	18.26	16.99	14.49	14.79	12.35	13.76	14.92
Black	8.93	6.45	6.58	1.87	1.16	1.57	2.25
Hispanic	6.40	5.90	5.94	2.25	1.22	1.82	2.16
Nat. American	0.63	0.45	0.37	0.20	0.10	0.16	0.24
Asian	8.83	9.90	10.40	6.55	5.80	6.24	9.23
Foreign Nat.	4.72	5.85	4.28	40.13	51.38	44.86	16.56

FIELD: Engineering Technology

SOURCE: Earned Degrees Conferred Series, 1971–91, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 7-29

DEGREES IN ENGINEERING TECHNOLOGY BY SEX AND LEVEL OF DEGREE, 1971 – 1991

	BACHELOR'S			MASTER'S		
YEAR	Total	Women	%Wom	Total	Women	%Wom
1971	5,148	42	0.8	134	0	0.0
1972	5,772	46	0.8	237	1	0.4
1973	4,854	52	1.1	122	2	1.6
1974	7,456	105	1.4	209	9	4.3
1975	7,497	192	2.6	221	4	1.8
1976	7,943	165	2.1	328	14	4.3
1977	8,348	196	2.3	284	23	8.1
1978	8,787	246	2.8	360	25	6.9
1979	9,355	327	3.5	268	18	6.7
1980	10,491	490	4.7	339	20	5.9
1981	11,713	675	5.8	323	39	12.1
1982	12,984	875	6.7	413	55	13.3
1983	17,015	1,353	8.0	520	51	9.8
1984	18,602	1,464	7.9	551	60	10.9
1985	18,767	1,447	7.7	607	62	10.2
1986	19,443	1,527	7.9	602	97	16.1
1987	19,250	1,478	7.7	612	83	13.6
1988	19,042	1,523	8.0	733	117	16.0
1989	18,977	1,560	8.2	828	106	12.8
1990	18,033	1,475	8.2	895	157	17.5
TOTALS	249,477	15,238	6.1	8,586	943	11.0

FIELD: Engineering
SOURCE: Engineering and Technology Enrollments, 1977 through 1991, Engineering Manpower Commission

TABLE 7-30

WOMEN, MINORITIES AND FOREIGN NATIONALS ENROLLED IN ENGINEERING BY LEVEL AND ATTENDANCE STATUS, FALL 1977 – 1991

YEAR (Fall)	FULL TIME UNDERGRADUATE STUDENTS										Part–Time Undergrads		GRADUATE STUDENTS			
	First Year		Second Year		Third Year		4&5th Year		Total				Full Time		Part Time	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
ALL STUDENTS																
1977	88,780	100	70,326	100	64,721	100	65,421	100	289,248	100	20,634	100	39,235	100	25,055	100
1978	98,805	100	72,150	100	69,816	100	73,466	100	314,237	100	22,843	100	38,381	100	24,133	100
1979	103,724	100	78,594	100	74,928	100	83,242	100	340,488	100	25,811	100	41,384	100	25,768	100
1980	110,149	100	84,982	100	80,024	100	89,962	100	365,117	100	32,227	100	44,335	100	23,250	100
1981	115,280	100	87,519	100	86,633	100	98,145	100	387,577	100	32,825	100	47,772	100	29,818	100
1982	115,303	100	89,785	100	90,541	100	107,761	100	403,390	100	31,940	100	50,410	100	31,589	100
1983	109,638	100	89,515	100	91,233	100	115,758	100	406,144	100	35,061	100	57,366	100	33,674	100
1984	105,249	100	83,946	100	85,509	100	115,931	100	390,635	100	34,864	100	57,277	100	35,888	100
1985	103,225	100	79,627	100	84,875	100	116,464	100	384,191	100	36,672	100	60,641	100	34,864	100
1986	99,238	100	76,195	100	80,386	100	113,701	100	369,520	100	38,137	100	67,333	100	39,863	100
1987	95,453	100	73,317	100	77,085	100	111,143	100	356,998	100	35,200	100	69,343	100	41,435	100
1988	98,009	100	71,030	100	73,761	100	103,369	100	346,169	100	39,243	100	69,226	100	42,781	100
1989	95,420	100	71,267	100	70,483	100	101,359	100	338,529	100	39,748	100	68,967	100	45,081	100
1990	94,346	100	72,204	100	72,666	100	99,626	100	338,842	100	41,445	100	72,456	100	45,378	100
1991	93,002	100	71,257	100	73,516	100	101,622	100	339,397	100	40,580	100	74,568	100	48,929	100
WOMEN																
1977	9,921	11.2	7,537	10.7	6,193	9.6	5,122	7.8	28,773	9.9	1,192	5.8	2,661	6.8	1,291	5.2
1978	11,789	11.9	8,447	11.7	7,453	10.7	6,829	9.3	34,518	11.0	1,414	6.2	2,930	7.6	1,294	5.4
1979	14,031	13.5	10,400	13.2	8,853	11.8	8,743	10.5	42,027	12.3	2,404	9.3	3,409	8.2	1,735	6.7
1980	16,004	14.5	12,094	14.2	10,269	12.8	10,577	11.8	48,944	13.4	2,918	9.1	4,014	9.1	2,344	10.1
1981	18,238	15.8	13,285	15.2	12,023	13.9	12,503	12.7	56,049	14.5	3,220	9.8	4,627	9.7	2,894	9.7
1982	19,155	16.6	14,704	16.4	13,561	15.0	14,908	13.8	62,328	15.5	4,250	13.3	5,585	11.1	3,250	10.3
1983	18,689	17.0	15,143	16.9	14,019	15.4	16,798	14.5	64,649	15.9	4,182	11.9	6,506	11.3	4,104	12.2
1984	17,356	16.5	14,264	17.0	13,897	16.3	17,142	14.8	62,659	16.0	4,040	11.6	6,761	11.8	4,256	11.9
1985	17,037	16.5	13,288	16.7	13,523	15.9	17,754	15.2	61,602	16.0	4,650	12.7	7,401	12.2	4,443	12.7
1986	15,155	15.3	12,581	16.5	12,445	15.5	17,431	15.3	57,612	15.6	5,046	13.2	8,557	12.7	5,357	13.4
1987	15,004	15.7	11,820	16.1	11,775	15.3	16,872	15.2	55,471	15.5	4,810	13.7	8,079	11.7	5,836	14.1
1988	15,837	16.2	11,465	16.1	11,356	15.4	16,114	15.6	54,772	15.8	5,616	14.3	8,773	12.7	6,545	15.3
1989	15,532	16.3	11,917	16.7	11,133	15.8	15,956	15.7	54,538	16.1	5,672	14.3	9,106	13.2	6,738	14.9
1990	16,674	17.7	12,047	16.7	11,678	16.1	15,516	15.6	55,915	16.5	5,901	14.2	9,758	13.5	6,853	15.1
1991	16,984	18.3	12,621	17.7	11,884	16.2	16,167	15.9	57,656	17.0	5,880	14.5	10,262	13.8	7,296	14.9
BLACKS																
1977	4,728	5.3	2,928	4.2	2,104	3.3	1,628	2.5	11,388	3.9	613	3.0	438	1.1	487	1.9
1978	5,493	5.6	3,103	4.3	2,330	3.3	2,028	2.8	12,954	4.1	726	3.2	450	1.2	393	1.6
1979	6,339	6.1	3,451	4.4	2,687	3.6	2,309	2.8	14,786	4.3	1,056	4.1	480	1.2	348	1.4
1980	6,661	6.0	3,963	4.7	2,903	3.6	2,654	3.0	16,181	4.4	1,425	4.4	588	1.3	399	1.7
1981	7,015	6.1	4,398	5.0	3,290	3.8	2,908	3.0	17,611	4.5	1,300	4.0	553	1.2	506	1.7
1982	6,715	5.8	4,436	4.9	3,261	3.6	3,186	3.0	17,598	4.4	1,794	5.6	634	1.3	503	1.6
1983	6,342	5.8	4,314	4.8	3,487	3.8	3,674	3.2	17,817	4.4	1,881	5.4	803	1.4	673	2.0
1984	6,245	5.9	4,084	4.9	3,461	4.0	3,661	3.2	17,451	4.5	1,753	5.0	793	1.4	606	1.7
1985	6,374	6.2	3,942	5.0	3,604	4.2	4,074	3.5	17,994	4.7	1,825	5.0	845	1.4	578	1.7
1986	5,873	5.9	3,720	4.9	3,331	4.1	3,906	3.4	16,830	4.6	1,629	4.3	874	1.3	748	1.9
1987	6,145	6.4	3,777	5.2	3,298	4.3	4,080	3.7	17,300	4.8	1,842	5.2	791	1.1	888	2.1
1988	7,075	7.2	3,911	5.5	3,357	4.6	3,884	3.8	18,227	5.3	2,178	5.6	868	1.3	899	2.1
1989	7,284	7.6	4,269	6.0	3,338	4.7	4,048	4.0	18,939	5.6	2,074	5.2	992	1.4	828	1.8
1990	8,370	8.9	4,570	6.3	3,718	5.1	4,241	4.3	20,909	6.2	2,653	6.4	1,086	1.5	948	2.1
1991	8,305	8.9	4,922	6.9	4,019	5.5	4,645	4.6	21,891	6.4	2,672	6.6	1,174	1.6	1,101	2.3

TABLE 7-30 (continued)

YEAR (Fall)	FULL TIME UNDERGRADUATE STUDENTS												GRADUATE STUDENTS			
	First Year		Second Year		Third Year		4&5th Year		Total		Part Time		Full Time		Part Time	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
HISPANICS[a]																
1979	3,768	3.6	2,354	3.0	2,230	3.0	2,775	3.3	11,127	3.3	941	3.6	472	1.1	381	1.5
1980	4,206	3.8	2,543	3.0	2,282	2.9	2,827	3.1	11,860	3.2	1,045	3.2	476	1.1	403	1.7
1981	4,768	4.1	2,976	3.4	2,598	3.0	3,273	3.3	13,615	3.5	744	2.3	595	1.2	408	1.4
1982	4,421	3.8	3,106	3.5	2,928	3.2	3,580	3.3	14,035	3.5	1,141	3.6	564	1.1	400	1.3
1983	4,760	4.3	3,251	3.6	3,113	3.4	4,058	3.5	15,182	3.7	1,280	3.7	731	1.3	510	1.5
1984	4,814	4.6	3,290	3.9	3,335	3.9	4,346	3.7	15,785	4.0	1,300	3.7	764	1.3	548	1.5
1985	4,789	4.6	3,500	4.4	3,527	4.2	5,484	4.7	17,300	4.5	1,298	3.5	1,058	1.7	644	1.8
1986	4,299	4.3	3,221	4.2	3,389	4.2	5,363	4.7	16,272	4.4	1,314	3.4	980	1.5	622	1.6
1987	4,465	4.7	3,424	4.7	3,396	4.4	5,846	5.3	17,131	4.8	1,122	3.2	1,132	1.6	700	1.7
1988	4,872	5.0	3,221	4.5	3,315	4.5	5,619	5.4	17,027	4.9	1,673	4.3	1,062	1.5	697	1.6
1989	5,228	5.5	3,293	4.6	3,251	4.6	5,795	5.7	17,567	5.2	1,440	3.6	1,122	1.6	770	1.7
1990	5,885	6.2	3,717	5.1	3,621	5.0	6,260	6.3	19,483	5.7	2,118	5.1	1,276	1.8	925	2.0
1991	5,949	6.4	3,927	5.5	3,920	5.3	6,234	6.1	20,030	5.9	2,411	5.9	1,356	1.8	1,056	2.2
ASIAN AMERICANS																
1979	3,133	3.0	2,578	3.3	2,800	3.7	2,966	3.6	11,477	3.4	772	3.0	1,603	3.9	1,033	4.0
1980	2,889	2.6	2,791	3.3	2,746	3.4	3,253	3.6	11,679	3.2	1,093	3.4	1,657	3.7	1,453	6.2
1981	4,035	3.5	3,247	3.7	3,381	3.9	3,799	3.9	14,462	3.7	1,353	4.1	2,217	4.6	1,591	5.3
1982	4,098	3.6	3,492	3.9	3,800	4.2	4,299	4.0	15,689	3.9	1,562	4.9	2,531	5.0	1,434	4.5
1983	4,983	4.5	4,452	5.0	5,201	5.7	6,046	5.2	20,682	5.1	2,325	6.6	3,636	6.3	2,333	6 9
1984	5,614	5.3	4,901	5.8	5,951	7.0	7,147	6.2	23,613	6.0	1,836	5.3	3,280	5.7	2,322	6.5
1985	6,566	6.4	5,233	6.6	6,336	7.5	8,403	7.2	26,538	6.9	2,229	6.1	4,166	6.9	2,456	7.0
1986	6,459	6.5	5,365	7.0	6,462	8.0	8,726	7.7	27,012	7.3	3,189	8.4	3,997	5.9	3,234	8.1
1987	7,074	7.4	6,015	8.2	6,984	9.1	10,057	9.0	30,130	8.4	2,665	7.6	4,315	6.2	3,590	8.7
1988	7,510	7.7	6,174	8.7	7,101	9.6	9,567	9.3	30,352	8.8	3,699	9.4	4,664	6.7	3,645	8.5
1989	7,669	8.0	6,342	8.9	7,089	10.1	9,703	9.6	30,803	9.1	2,557	6.4	4,404	6.4	3,690	8.2
1990	7,926	8.4	6,519	9.0	7,141	9.8	9,671	9.7	31,257	9.2	3,953	9.5	4,753	6.6	4,257	9.4
1991	8,212	8.8	6,758	9.5	7,756	10.6	10,858	10.7	33,584	9.9	4,219	10.4	4,651	6.2	4,517	9.2
AMERICAN INDIANS																
1979	317	0.3	146	0.2	152	0.2	144	0.2	759	0.2	60	0.2	57	0.1	17	0.1
1980	385	0.3	187	0.2	174	0.2	177	0.2	903	0.2	117	0.4	45	0.1	63	0.3
1981	412	0.4	189	0.2	176	0.2	193	0.2	970	0.3	113	0.3	42	0.1	53	0.2
1982	371	0.3	266	0.3	205	0.2	236	0.2	1,078	0.3	145	0.5	89	0.2	64	0.2
1983	376	0.3	239	0.3	[illegible]	0.3	276	0.2	1,127	0.3	145	0.4	53	0.1	60	0.2
1984	410	0.4	241	0.3	232	0.3	303	0.3	1,186	0.3	92	0.3	73	0.1	51	0.1
1985	365	0.4	246	0.3	221	0.3	288	0.2	1,120	0.3	120	0.3	72	0.1	54	0.2
1986	353	0.4	201	0.3	216	0.3	301	0.3	1,071	0.3	124	0.3	71	0.1	52	0.1
1987	354	0.4	215	0.3	228	0.3	353	0.3	1,150	0.3	109	0.3	91	0.1	56	0.1
1988	433	0.4	209	0.3	212	0.3	310	0.3	1,164	0.3	120	0.3	101	0.1	70	0.2
1989	424	0.4	270	0.4	199	0.3	312	0.3	1,205	0.4	113	0.3	99	0.1	71	0.2
1990	526	0.6	327	0.5	271	0.4	344	0.3	1,468	0.4	139	0.3	113	0.2	111	0.2
1991	582	0.6	320	0.4	275	0.4	361	0.4	1,538	0.5	150	0.4	116	0.2	117	0.2
FOREIGN NATIONALS																
1980	5,095	4.6	5,436	6.4	6,496	8.1	7,627	8.5	24,654	6.8	1,474	4.6	16,120	36.4	2,690	11.6
1981	4,974	4.3	5,611	6.4	6,831	7.9	7,951	8.1	25,367	6.5	1,218	3.7	17,985	37.6	2,577	8.6
1982	4,925	4.3	5,148	5.7	6,176	6.8	7,358	6.8	23,607	5.9	1,443	4.5	17,651	35.0	2,670	8.5
1983	5,234	4.8	5,161	5.8	6,194	6.8	8,394	7.3	24,983	6.2	1,454	4.1	20,110	35.1	3,530	10.5
1984	4,850	4.6	5,478	6.5	6,211	7.3	8,275	7.1	24,814	6.4	1,305	3.7	20,294	35.4	3,579	10.0
1985	5,282	5.1	5,553	7.0	6,756	8.0	9,464	8.1	27,055	7.0	1,536	4.2	21,953	36.2	3,622	10.4
1986	4,154	4.2	4,864	6.4	5,586	6.9	8,143	7.2	22,747	6.2	1,608	4.2	24,864	36.9	4,437	11.1
1987	3,930	4.1	4,402	6.0	5,638	7.3	8,263	7.4	22,233	6.2	1,781	5.1	26,948	38.9	5,221	12.6
1988	3,848	3.9	3,817	5.4	5,148	7.0	7,922	7.7	20,735	6.0	1,822	4.6	29,557	42.7	5,871	13.7
1989	3,863	4.0	3,735	5.2	4,706	6.7	7,710	7.6	20,014	5.9	1,617	4.1	31,174	45.2	5,741	12.7
1990	4,442	4.7	3,888	5.4	4,796	6.6	7,436	7.5	20,562	6.1	2,006	4.8	32,256	44.5	6,891	15.2
1991	4,394	4.7	4,139	5.8	4,661	6.3	6,645	6.5	19,839	5.8	1,737	4.3	33,448	44.9	8,101	16.6

SOURCE: Engineering and Technology Enrollments, Fall 1990, Engineering Manpower Commission

TABLE 7-31

WOMEN AND MINORITIES ENROLLED FULL-TIME IN ENGINEERING BY CURRICULUM AND LEVEL, FALL 1990

Engineering Curriculum	Total All Students		Women		Black		Hispanic		American Indian		Asian-American		Foreign	
	UG	Grad	UG	Grad	UG	Grad	UG	Grad	UG	Grad	UG	Grad	UG	Grad
Aerospace	17162	2722	2243	199	582	30	991	49	76	2	1470	175	772	909
Agricultural	1558	609	209	63	33	0	36	4	5	0	38	7	61	360
Architectural	2601	39	612	8	360	2	126	2	16	0	127	1	111	16
Biomedical	3528	1662	1247	425	149	20	120	23	6	6	604	97	221	525
Ceramic	1190	342	215	56	24	3	11	5	2	1	80	12	30	131
Chemical	20048	5364	6458	906	1416	73	1344	94	74	9	1494	279	1017	2654
Civil	36081	7640	6170	1061	1588	71	2798	156	193	16	2350	285	1792	3794
Computer	20878	7602	3975	1274	1572	154	1348	112	112	14	2811	623	1688	3274
Electrical	82883	19237	10264	2049	7008	345	4878	353	340	22	11170	1720	7601	8618
Engineering Science	4302	2075	838	306	114	34	151	27	10	2	382	125	226	716
Environmental	1107	1301	308	347	9	20	31	18	1	4	22	43	15	393
General	11839	596	2042	75	770	15	850	8	53	0	1112	45	585	210
Industrial	13910	4280	3937	762	988	98	1200	121	40	13	872	218	1267	2108
Marine	2098	460	220	52	36	1	85	0	10	0	65	11	71	231
Materials	3255	3448	691	593	81	36	158	47	13	5	285	213	109	1600
Mechanical	64475	11244	6934	943	3181	134	3338	185	275	11	4516	697	3028	5178
Mining	1104	889	218	166	16	10	27	15	9	4	28	34	58	345
Nuclear	1380	1074	176	125	38	4	58	28	6	1	77	46	28	468
Petroleum	1530	419	232	26	36	4	70	6	9	1	60	11	282	267
Systems	1129	981	233	186	54	21	59	18	5	2	134	85	85	370
All Other	46784	472	8693	136	2848	11	1804	7	213	0	3560	26	1535	89
TOTAL	338,842	72,456	55,915	9,758	20,909	1,086	19,483	1,276	1,468	113	31,257	4,753	20,562	32,256
PERCENT														
Aerospace	100	100	13.1	7.3	3.4	1.1	5.8	1.8	0.4	0.1	8.6	6.4	4.5	33.4
Agricultural	100	100	13.4	10.3	2.1	0.0	2.3	0.7	0.3	0.0	2.4	1.1	3.9	59.1
Architectural	100	100	23.5	20.5	13.8	5.1	4.8	5.1	0.6	0.0	4.9	2.6	4.3	41.0
Biomedical	100	100	35.3	25.6	4.2	1.2	3.4	1.4	0.2	0.4	17.1	5.8	6.3	31.6
Ceramic	100	100	18.1	16.4	2.0	0.9	0.9	1.5	0.2	0.3	6.7	3.5	2.5	38.3
Chemical	100	100	32.2	16.9	7.1	1.4	6.7	1.8	0.4	0.2	7.5	5.2	5.1	49.5
Civil	100	100	17.1	13.9	4.4	0.9	7.8	2.0	0.5	0.2	6.5	3.7	5.0	49.7
Computer	100	100	19.0	16.8	7.5	2.0	6.5	1.5	0.5	0.2	13.5	8.2	8.1	43.1
Electrical	100	100	12.4	10.7	8.5	1.8	5.9	1.8	0.4	0.1	13.5	8.9	9.2	44.8
Engineering Science	100	100	19.5	14.7	2.6	1.6	3.5	1.3	0.2	0.1	8.9	6.0	5.3	34.5
Environmental	100	100	27.8	26.7	0.8	1.5	2.8	1.4	0.1	0.3	2.0	3.3	1.4	30.2
General	100	100	17.2	12.6	6.6	2.5	7.2	1.3	0.4	0.0	9.4	7.6	4.8	35.2
Industrial	100	100	28.3	17.8	7.1	2.3	8.6	2.8	0.3	0.3	6.3	5.1	9.1	49.3
Marine	100	100	10.5	11.3	1.7	0.2	4.1	0.0	0.5	0.0	3.1	2.4	3.4	50.2
Materials	100	100	21.2	17.2	2.5	1.0	4.9	1.4	0.4	0.1	8.8	6.2	3.3	46.4
Mechanical	100	100	10.8	8.4	4.9	1.2	5.2	1.6	0.4	0.1	7.0	6.2	4.7	46.1
Mining	100	100	19.7	18.7	1.4	1.1	2.4	1.7	0.8	0.4	2.5	3.8	5.3	38.8
Nuclear	100	100	12.8	11.6	2.8	0.4	4.2	2.4	0.4	0.1	5.6	4.3	2.0	43.6
Petroleum	100	100	15.2	6.2	2.4	1.0	4.6	1.4	0.6	0.2	3.9	2.6	18.4	63.7
Systems	100	100	20.6	19.0	4.8	2.1	5.2	1.8	0.4	0.2	11.9	8.7	7.5	37.7
All Other	100	100	18.6	28.8	6.1	2.3	3.9	1.5	0.5	0.0	7.6	5.5	3.3	18.9
TOTAL	100	100	16.5	13.5	6.2	1.5	5.7	1.8	0.4	0.2	9.2	6.6	6.1	44.5

FIELD: Nuclear Engineering

SOURCES: Nuclear Engineering Enrollments and Degrees, U.S. Department of Energy and Manpower Assessment Briefs.

TABLE 7-32

ENROLMENTS AND DEGREES IN NUCLEAR ENGINEERING BY SEX, MINORITY GROUP, CITIAENSHIP & EDUCATION LEVEL, 1981–90

Year	TOTAL ENROLLMENTS (Fall Term) Undergraduate No.	%	Graduate Master's No.	%	Ph.D. No.	%	DEGREES YEAR ENDING JUNE 30 Bachelor's No.	%	Master's No.	%	Ph.D. No.	%
TOTAL												
1981	1532	100	676	100	577	100	692	100	315	100	132	100
1982	1690	100	946	100	606	100	681	100	342	100	127	100
1983	1701	100	951	100	564	100	654	100	325	100	124	100
1984	1643	100	924	100	559	100	660	100	316	100	132	100
1985	1500	100	835	100	582	100	612	100	306	100	113	100
1986	1344	100	806	100	549	100	572	100	283	100	120	100
1987	1307	100	793	100	613	100	509	100	295	100	97	100
1988	1389	100	750	100	647	100	484	100	232	100	114	100
1989	1414	100	757	100	670	100	451	100	287	100	102	100
1990	1483	100	722	100	701	100	436	100	220	100	133	100
WOMEN												
1981	122	9.0	55	6.3	26	4.5	46	6.6	22	7.0	6	4.5
1982	130	8.2	74	7.8	30	5.0	42	6.2	27	7.9	7	5.5
1983	137	7.6	64	6.7	31	5.5	45	6.9	18	5.5	6	4.8
1984	138	9.1	76	8.2	37	6.6	60	9.1	17	5.4	7	5.3
1985	141	11.5	79	9.5	40	6.9	61	10.0	20	6.5	5	4.4
1986	141	10.3	68	8.4	39	7.1	60	10.5	23	8.1	9	7.5
1987	134	10.3	117	14.8	51	8.3	55	10.8	32	10.8	4	4.1
1988	130	9.4	78	10.4	56	8.7	51	10.5	21	9.1	6	5.3
1989	133	9.4	85	11.2	53	7.9	45	10.0	30	10.5	7	6.9
1990	149	10.0	85	11.8	63	9.0	48	11.0	23	10.5	10	7.5
BLACKS												
1981	13	1.1	9	1.0	6	1.0	4	0.6	4	1.3	1	0.8
1982	12	1.2	12	1.3	6	1.0	7	1.0	5	1.5		
1983	18	1.0	7	0.7	7	1.2	3	0.5	1	0.3		
1984	13	0.7	6	0.6	9	1.6	4	0.6	1	0.3		
1985	22	2.0	13	1.6	5	0.9	3	0.5	1	0.3	3	2.7
1986	21	1.6	8	1.0	2	0.4	5	0.9	2	0.7	3	2.5
1987	21	1.6	5	0.6	4	0.7	8	1.6	3	1.0		
1988	38	2.7	8	1.1	2	0.3	5	1.0	1	0.4	2	1.8
1989	35	2.5	6	0.8	4	0.6	5	1.1	2	0.7		
1990	34	2.3	5	0.7	2	0.3	8	1.8	2	0.9		

Year	TOTAL ENROLLMENTS (Fall Term) Undergraduate No.	%	Graduate Master's No.	%	Ph.D. No.	%	DEGREES YEAR ENDING JUNE 30 Bachelor's No.	%	Master's No.	%	Ph.D. No.	%
HISPANICS												
1981	28	1.8	10	1.1	10	1.7	8	1.2	8	2.5	0	0.0
1982	31	1.8	8	0.8	6	1.0	8	1.2	3	0.9	1	0.8
1983	25	1.5	14	1.5	6	1.1	9	1.4	4	1.2	1	0.8
1984	10	0.6	16	1.7	3	0.5	11	1.7	5	1.6	1	0.8
1985	21	1.4	9	1.1	8	1.4	7	1.1	1	0.3	0	0.0
1986	25	1.9	11	1.4	4	0.7	10	1.7	6	2.1	2	1.7
1987	37	2.8	9	1.1	5	0.8	8	1.6	3	1.0	1	1.0
1988	31	2.2	10	1.3	6	0.9	5	1.0	1	0.4	0	0.0
1989	24	1.7	12	1.6	8	1.2	11	2.4	3	1.0	1	1.0
1990	36	2.4	17	2.4	9	1.3	4	0.9	1	0.5	3	2.3
ASIAN AMERICAN/PACIFIC ISLANDERS												
1981	20	1.3	18	2.1	14	2.4	8	1.2	5	1.6	3	2.3
1982	26	1.5	22	2.3	14	2.3	12	1.8	9	2.6	6	4.7
1983	26	1.5	25	2.6	18	3.2	11	1.7	7	2.2	3	2.4
1984	26	1.6	20	2.2	27	4.8	3	0.5	9	2.8	4	3.0
1985	41	2.7	8	1.0	14	2.4	4	0.7	11	3.6	3	2.7
1986	46	3.4	16	2.0	15	2.7	7	1.2	5	1.8	7	5.8
1987	41	3.1	23	3.7	24	3.9	12	2.4	4	1.4	3	3.1
1988	44	3.2	27	3.6	25	3.9	13	2.7	9	3.9	3	2.6
1989	27	1.9	16	2.1	24	3.6	7	1.6	9	3.1	1	1.0
1990	36	2.4	8	1.1	25	3.6	23	5.3	4	1.6	3	2.3
FOREIGN NATIONALS												
1981	122	5.9	205	23.4	262	45.4	42	6.1	81	25.7	63	47.7
1982	126	5.8	279	29.5	275	45.4	56	8.2	84	24.6	55	43.3
1983	114	6.9	309	32.5	287	50.9	52	8.0	100	30.8	64	51.6
1984	120	6.2	256	27.7	257	46.0	43	6.5	123	38.9	59	44.7
1985	70	5.4	247	29.6	291	50.0	37	6.0	85	27.8	65	57.5
1986	67	5.6	222	27.5	233	42.4	26	4.5	86	30.4	63	52.5
1987	50	3.1	216	27.2	283	46.2	20	3.9	93	31.5	54	55.7
1988	27	1.9	207	27.6	332	51.3	21	4.3	87	37.5	56	49.1
1989	31	2.2	218	28.8	336	50.1	6	1.3	69	24.0	46	45.1
1990	35	2.4	62	8.6	65	9.3	6	1.4	69	31.4	46	34.6

FIELD: Health Physics

SOURCE: Health Physics/Radiation Protection Enrollments and Degrees, U.S. Department of Energy, and Manpower Assessment Briefs.

TABLE 7-33

ENROLLMENTS AND DEGREES IN HEALTH PHYSICS/RADIATION PROTECTION BY SEX, MINORITY GROUP, CITIZENSHIP AND EDUCATION LEVEL, 1983 – 1990

Year	TOTAL ENROLLMENTS (Fall Term) Undergraduate No.	%	Graduate Master's No.	%	Ph.D. No.	%	DEGREES YEAR ENDING JUNE 30 BA No.	%	Master's No.	%	Ph.D. No.	%
TOTAL												
1983	308	100	375	100	165	100	106	100	162	100	38	100
1984	328	100	622	100	163	100	113	100	180	100	43	100
1985	315	100	521	100	186	100	92	100	179	100	26	100
1986	238	100	494	100	220	100	125	100	171	100	26	100
1987	225	100	497	100	218	100	85	100	136	100	36	100
1988	173	100	462	100	203	100	71	100	150	100	28	100
1989	200	100	474	100	225	100	65	100	195	100	39	100
1990	259	100	491	100	233	100	70	100	144	100	32	100
WOMEN												
1983	102	33.1	121	32.3	34	20.6	25	23.6	51	31.5	4	10.8
1984	104	31.7	171	27.5	26	16.0	37	32.7	43	23.9	8	18.6
1985	112	35.6	159	30.5	32	17.2	33	35.9	31	17.3	8	25.8
1986	97	40.8	172	34.8	44	20.0	45	36.0	54	31.6	3	12.0
1987	81	36.0	139	28.0	51	23.4	30	35.3	44	32.4	5	13.9
1988	71	41.0	110	23.8	50	24.6	22	31.0	47	32.2	4	14.3
1989	73	36.5	124	26.2	46	20.4	27	41.5	63	32.3	4	10.3
1990	50	19.3	121	24.6	53	22.7	23	32.9	34	23.6	3	9.4
BLACK												
1983	21	6.8	6	1.6	1	0.6	2	1.9	4	2.5		
1984	19	5.8	14	2.3	1	0.6	4	3.5	1	0.6		
1985	27	8.6	7	1.3			2	2.2	1	0.6		
1986	13	5.5	7	1.4	1	0.5	6	4.8	1	0.6		
1987	12	5.3	8	1.6	1	0.5	4	4.7	3	2.2		
1988	11	6.4	7	1.5	1	0.5	6	8.5				
1989	10	5.0	9	1.9	2	0.9	4	6.2	4	2.1		
1990	5	1.9	9	1.8	2	0.9	2	2.9	4	2.8		

Year	TOTAL ENROLLMENTS (Fall Term) Undergraduate No.	%	Graduate Master's No.	%	Ph.D. No.	%	DEGREES YEAR ENDING JUNE 30 BA No.	%	Master's No.	%	Ph.D. No.	%
HISPANICS												
1983	15	4.9	8	2.1	2	1.2	1	0.9	1	0.6	1	2.7
1984	14	4.3	11	1.8	2	1.2	3	2.7	5	2.8		
1985	13	4.1	12	2.3	3	1.6	4	4.3	6	3.4	1	3.2
1986	6	2.5	9	1.8	5	2.3	2	1.6	3	1.8		
1987	5	2.2	5	1.0	4	1.8			1	0.7		
1988	4	2.3	5	1.1	6	3.0	2	2.8	4	2.7	1	3.6
1989	2	1.0	7	1.5	3	1.3	2	3.1	1	0.5		
1990	3	1.2	7	1.4	4	1.7	4	5.7	3	2.1		
ASIAN AMERICAN/PACIFIC ISLANDERS												
1983	2	0.6	8	2.1	9	5.5	1	0.9	7	4.3	1	2.7
1984	3	0.9	10	1.6	13	8.0	1	0.9	2	1.1	4	9.3
1985	1	0.3	11	2.1	11	5.9	1	1.1	3	1.7	1	3.2
1986	3	1.3	6	1.2	16	7.3	2	1.6	2	1.2	1	4.0
1987	4	1.8	13	2.6	15	6.9	1	1.2	6	4.4	2	5.6
1988	3	1.7	11	2.4	9	4.4	2	2.8	3	2.1	2	7.1
1989	5	2.5	16	3.4	16	7.1			6	3.1	3	7.7
1990	8	3.1	17	3.5	11	4.7	2	2.9	9	6.3	2	6.3
FOREIGN NATIONALS												
1983	3	1.0	60	16.0	36	21.8	3	2.8	20	12.3	6	15.8
1984	3	0.9	46	7.7	36	22.1	3	2.7	22	12.2	9	20.9
1985	2	0.6	40	7.7	54	29.0	2	2.2	32	17.9	10	38.5
1986	5	2.1	68	13.8	67	30.5	2	1.6	25	14.6	6	23.1
1987	4	1.8	53	10.7	66	30.3	2	2.4	18	13.2	9	25.0
1988	1	0.6	51	11.0	75	36.9	2	2.8	17	11.3	5	17.9
1989	3	1.5	50	10.5	67	29.8			18	9.2	11	28.2
1990	4	1.5	60	12.2	92	39.5	2	2.9	23	16.0	10	31.3

FIELD: Engineering

SOURCE: Engineering and Technology Degrees, 1948 through 1991, Engineering Manpower Commission

TABLE 7-34

BACHELORS DEGREES AWARDED IN ENGINEERING TECHNOLOGY BY CURRICULUM, SEX AND MINORITY GROUP

Selected Years 1984 – 1991

Curriculum	Total						African Americans						Hispanics						Native Americans					
	1984	1986	1988	1989	1990	1991	'84	'86	'88	'89	'90	'91	'84	'86	'88	'89	'90	'91	'84	'86	'88	'89	'90	'91
Aeronautical	189	273	160	170	156	208	2	3	1	2	2	3	2	17	6	7	6	6		1	1	1	1	
Architectual	149	164	156	153	218	211	20	14	17	16	13	15	2	3	1	1	1		1					1
Automotive	12	20	10	38	6	6								1	1			2						
Chemical	18	20	31	22	48	89	1			1														
Civil	780	648	567	588	446	506	24	41	43	33	17	29	25	17	22	24	11	7	3	1	1	3	3	7
Computer	259	222	401	414	380	402	31	6	24	30	23	39	6	2	4	5	12		1		1	2	2	
Construction	548	545	433	448	606	602	24	22	14	21	20	28	13	6	10	8	12	12			6	2		1
Drafting/Design	180	186	199	172	190	167	2	1	2	4	1	5	2	2	6	3	3	3		1				1
Electrical	1678	2079	2061	1885	1829	1833	70	100	123	91	110	132	48	11	27	21	29	29	2	1	5	3	3	5
Electromechanical	187	147	155	161	174	128	40	20	27	39	39	35	8	8	6	9	11	7				1		
Electronic	2207	3218	3148	3149	2768	2513	187	112	93	109	250	197	85	35	51	52	144	135	4	5	4	4	4	3
Engineering Sci			9	7		3			1															
General Tech	624	985	702	699	543	552	13	20	11	10	34	37	29	52	32	41	32	52	1	6	1	1		2
Industrial/Manuf	966	1427	1352	1327	874	1322	71	36	76	72	57	84	23	17	26	21	15	22		1	2	1		2
Marine	48	56	107	74	75	71		3	6	23	3	1		1	4	2	2	4				1		11
Materials		2	5	7	1	4																		
Mechanical	1980	2120	1930	1796	1701	1642	75	83	70	64	76	62	60	33	32	22	27	24	1	4	6	3	3	3
Mining/Metall/Weld	188	69	31	32	18	32	2		1	1			8	5										
Nuclear			2	9	8	6																		
Other	169	322	240	168	196	202	20	5	8	4	13	6	3	2	4	3	3	5	1					
ALL STUDENTS*	10182	12503	11729	11299	10555	10517	582	486	517	499	658	673	314	212	232	218	308	308	14	20	27	29	16	26

Curriculum	Women						Under–rep. Minorities						Asian Americans						Foreign Nationals					
	'84	'86	'88	'89	'90	'91	'84	'86	'88	'89	'90	'91	'84	'86	'88	'89	'90	'91	'84	'86	'88	'89	'90	'91
Aeronautical	4	19	10	11	22	21	4	20	8	10	9	9	1	16	5	6	11	11	37	27	27	29	24	30
Architectual	16	30	27	29	39	46	23	17	18	17	14	16	3	1		2	11	3	9	8	8	7	12	8
Automotive		1	1					1	1			2	1			3		1	7	4	4			
Chemical	2	2	4	3	4	3	1			1							4	1		2	2	1	3	3
Civil	50	51	53	48	39	26	52	63	71	58	31	43	26	11	7	14	6	3	75	52	52	56	36	24
Computer	73	51	50	99	84	69	38	9	29	36	37	39	2	10	22	20	26	13	9	18	18	18	42	22
Construction	40	26	20	17	50	37	37	29	25	35	34	41	32	9	4	5	10	7	15	15	15	18	9	10
Drafting/Design	17	16	22	24	19	20	4	3	8	7	4	9	3	2	3	2	1	1		6	6	1	3	3
Electrical	102	94	93	95	76	78	120	113	158	117	142	166	75	42	77	57	72	69	82	63	63	47	83	75
Electromechanical	9	6		4	8	6	48	28	33	48	51	42	9	4	3	11	20	17	2	5	5	31	6	5
Electronic	107	76	92	98	179	172	276	148	150	165	398	335	129	96	103	106	228	246	141	109	109	94	156	155
Engineering Science			2	1					1															
General Tech	32	85	41	68	78	47	43	81	47	52	67	91	33	66	38	64	38	60	19	27	27	6	12	6
Industrial/Manuf	167	159	150	132	109	151	94	54	104	95	73	108	14	13	17	18	19	20	48	32	32	36	20	47
Marine		2	6		5	3		4	10	25	6	16	3	7	1	1	4	2	6	2	2	1	2	1
Materials			1			1																		
Mechanical	74	106	98	72	93	73	136	119	103	92	106	89	37	30	39	38	33	37	100	77	77	63	69	52
Mining/Metall/Weld	14	4	5	1			10	5	1	1									5	3	3			
Nuclear															2									
Other	37	31	55	33	44	28	24	7	12	7	16	11	2		4			7	15	7	7	15	9	8
ALL STUDENTS*	744	758	730	735	849	781	910	701	779	745	985	1007	372	307	325	347	491	498	570	457	457	423	486	449

* Note: groups are neither all–inclusive nor mutually exclusive, and will not sum to totals.

FIELD: Engineering

SOURCE: Engineering and Technology Degrees, 1984 through 1991, Engineering Manpower Commission

TABLE 7-35

ENGINEERING TECHNOLOGY ASSOCIATE DEGREES BY CURRICULUM, SEX AND MINORITY GROUP 1984 – 1991

	Total				Women				African Americans				Hispanics				Native Americans				Asian Americans				Foreign Nationals			
Curriculum	1984	1988	1990	1991	'84	'88	'90	'91	'84	'88	'90	'91	'84	'88	'90	'91	'84	'88	'90	'91	'84	'88	'90	'91	'84	'88	'90	'91
Aerospace & related	384	292	250	286	12	6	3	6	32	35	38	42	38	47	31	37					24	21	25	26	14	21	21	34
Air Cond/Heat/Refrig	290	216	227	218	5	1	1	2	6	5	6	6	0	2	5	3	2	7	2	4	1		2	2	1			2
Architectural	935	779	821	878	179	134	174	165	45	21	30	25	24	6	22	13	1	4	2	1	4	12	15	18	20	7	13	9
Automotive	314	251	260	433	7	7	3	12	25	9	22	12	6	3	8	11		3	2	3	1	4	6	4	3	3	3	
Chemical	290	231	231	234	118	96	97	85	33	11	22	8	10	2	4	5	2		1	1	4	6	7	5		2	2	1
Civil	1078	882	982	926	84	95	87	103	45	25	46	40	41	10	17	18	2	4	2	1	14	6	8	14	40	14	16	12
Computer	1309	960	765	734	380	214	172	164	64	97	51	61	23	25	21	20	6	4	7	3	19	41	37	34	40	19	35	21
Construction	304	338	355	451	16	13	30	27	15	4	14	9	8	6	7	5	2	2	1		1	1	2	5	2	1	4	3
Drafting/Design	675	792	754	780	122	144	161	165	33	32	36	29	13	15	10	15	2	5	3	3	10	5	13	33	10	8	10	4
Electrical	2864	2552	2194	1904	130	139	137	119	127	94	133	83	53	44	48	45	6	10	7	13	30	61	88	66	26	9	24	20
Electromechanical	389	462	311	247	25	32	28	18	33	15	28	9	11	6	14	4	1	1			2	6	6	11	2		7	
Electronic	4430	265	2544	2210	274	196	223	193	239	136	169	162	126	51	81	67	19	8	6	6	156	136	121	111	69	53	81	65
Engineering Science	164	28	16	10	22	4	2	5	5	3	1			1			1				2	2			3			
General Engineering	179	107	273	159	13	14	27	18	1	4	10	6	4	3	12	5				1	6	6	18				2	1
Industrial/Manufact	839	899	711	745	117	85	72	95	31	28	29	34	12	7	10	7	1	1		3	10	18	22	16	8	15	6	8
Marine	7	6	12	11		2	1	2						1													1	1
Materials		51	38	22		2	3	4		1	1	1																1
Mechanical	2668	2069	1753	1685	198	155	108	125	79	69	51	45	57	17	29	25	7	7	1	3	32	36	38	39	43	26	16	18
Mining/Metall/Weld	269	54	47	60	15	3	3	2	3	3	2		2	2			2					1						
Nuclear	44	30	15	14	5	4	4	6	1	1					1	1												
Others	1005	289	285	289	119	39	42	43	60	8	22	9	19	7	11	9	11	1			27	1	6	3	12	3	5	9
ALL STUDENTS*	18432	11553	12844	12276	1841	1385	1378	1359	877	601	711	581	447	255	331	290	65	57	34	42	343	365	414	387	295	181	246	209

* Note: groups are neither all–inclusive nor mutually exclusive, and will not sum to totals.

FIELD: Engineering Technology

SOURCE: Engineering and Technology Enrollments Fall 1980 through 1990, Engineering Manpower Commission

TABLE 7-36

ENGINEERING TECHNOLOGY ENROLLMENTS OF ALL STUDENTS, WOMEN AND MINORITIES, FALL 1980 – 1990

YEAR (Fall)	ASSO DEG & PRE–ENG Full Time 1st Year	2nd Year	Total*	Part Time	BACHELOR OF TECHNOLOGY Full Time 1st Year	%	2nd Year	3rd Year	4th Year	Total	%T	Part Time	All Post Bacc.
ALL STUDENTS													
1980	67,971	35,434	104,593	54,549	10,998	100	8,543	12,271	12,132	43,944	100	12,767	556
1981	55,202	32,461	88,535	45,299	10,691	100	8,313	13,339	13,020	45,363	100	11,409	546
1982	51,513	29,438	81,748	45,095	7,826	100	7,369	11,419	11,604	38,218	100	10,696	376
1983	36,866	23,618	61,409	37,299	16,166	100	10,181	11,818	12,875	51,040	100	13,252	296
1984	29,211	20,053	50,429	31,811	17,595	100	11,663	15,561	15,911	60,730	100	14,640	287
1985	25,618	16,579	42,663	29,321	8,771	100	6,714	10,554	13,829	39,868	100	11,212	271
1986	29,701	18,699	49,059	33,629	9,476	100	6,913	10,839	14,251	41,479	100	13,225	413
1987	24,633	16,450	42,487	33,144	8,052	100	6,456	9,890	13,715	38,113	100	14,757	985
1988	24,825	15,530	42,115	36,954	8,652	100	6,322	9,436	13,099	37,509	100	15,126	574
1989	23,620	15,264	40,694	36,048	8,605	100	6,363	8,465	12,052	35,485	100	15,460	293
1990	22,254	14,266	38,123	35,708	7,924	100	6,320	8,349	11,674	34,267	100	15,119	243
WOMEN													
1980	8,754	3,795	12,920	7,594	1,085	12.5	837	947	834	3,703	9.9	776	60
1981	7,838	3,970	11,876	8,059	1,360	15.7	978	1,158	1,067	4,563	12.2	766	62
1982	6,472	3,503	10,020	5,389	762	8.8	624	848	736	2,970	7.9	599	29
1983	4,296	2,701	7,035	4,307	1,284	14.8	796	890	960	3,930	10.5	964	42
1984	3,640	2,295	6,025	3,375	1,284	14.8	796	890	960	3,930	10.5	1,477	71
1985	3,331	1,877	5,228	3,744	774	8.9	605	814	1,097	3,290	8.8	958	44
1986	3,585	2,039	5,664	3,141	865	10.0	714	921	1,214	3,714	9.9	1,045	67
1987	2,848	1,723	4,698	3,932	659	7.6	526	727	1,325	3,237	8.6	1,105	66
1988	3,007	1,692	4,839	5,139	737	8.5	538	744	1,032	3,051	8.1	1,490	50
1989	2,772	1,725	4,654	4,835	885	10.2	615	764	1,054	3,318	8.8	1,425	43
1990	2,588	1,544	4,292	4,692	756	8.7	617	930	930	3,072	8.2	1,257	30
BLACKS													
1980	5,888	2,191	8,139	3,762	1,071	9.7	752	896	716	3,435	7.8	552	20
1981	4,519	1,834	6,420	3,860	1,209	11.3	886	978	905	3,978	8.8	538	39
1982	4,567	1,795	6,384	2,922	818	10.5	707	670	542	2,737	7.2	483	7
1983	3,512	1,479	5,015	2,716	2,544	15.7	1,237	933	760	5,474	10.7	889	15
1984	2,611	1,273	3,894	2,245	2,588	14.7	1,400	1,310	1,038	6,336	10.4	1,037	13
1985	2,582	1,121	3,708	2,671	1,117	12.7	642	725	768	3,252	8.2	474	54
1986	3,173	1,311	4,489	2,194	1,299	13.7	811	764	856	3,730	9.0	633	15
1987	1,893	900	2,905	2,205	1,074	13.3	711	760	886	3,431	9.0	744	33
1988	1,923	901	2,998	2,732	1,288	14.9	764	760	872	3,684	9.8	889	17
1989	2,978	1,327	4,484	3,267	1,355	15.7	722	836	884	3,797	10.1	817	6
1990	2,911	1,377	4,458	3,496	1,335	15.4	837	822	1,004	3,998	10.7	875	5

YEAR (Fall)	ASSO DEG & PRE–ENG Full Time 1st Yr	2nd Yr	Total*	Part Time	BACHELOR OF TECHNOLOGY Full Time 1st Yr	%	2nd Yr	3rd Yr	4th Yr	Total	%T	Part Time
HISPANICS												
1980	2,596	1,236	3,873	1,291	151	1.4	146	260	228	805	1.8	332
1981	1,668	797	2,473	1,064	213	2.0	146	270	268	897	2.0	465
1982	2,015	815	2,864	1,073	216	2.8	170	263	236	885	2.3	400
1983	1,475	569	2,072	803	730	4.5	425	405	365	1,925	3.8	515
1984	1,026	563	1,619	792	918	5.2	451	543	489	2,401	4.0	523
1985	888	484	1,398	887	339	3.9	196	393	515	1,443	3.6	355
1986	1,405	613	2,030	594	358	3.8	228	299	357	1,242	3.0	196
1987	708	396	1,152	845	321	4.0	261	370	468	1,420	3.7	403
1988	722	415	1,231	1,045	349	4.0	234	305	414	1,302	3.5	412
1989	1,307	651	2,076	1,125	330	3.8	217	299	381	1,227	3.3	283
1990	1,169	559	1,818	1,602	430	5.0	261	280	421	1,392	3.7	352
ASIAN AMERICANS												
1980	981	543	1,559	541	127	1.2	94	226	232	681	1.5	110
1981	1,015	557	1,606	660	192	1.8	130	182	285	789	1.7	216
1982	1,048	544	1,623	500	197	2.5	224	286	265	972	2.5	236
1983	807	421	1,266	560	420	2.6	323	317	423	1,483	2.9	401
1984	641	447	1,109	467	432	2.5	336	478	474	1,720	2.8	436
1985	667	444	1,120	679	348	4.0	263	302	442	1,355	3.4	301
1986	908	562	1,480	458	432	4.6	297	416	442	1,587	3.8	381
1987	656	462	1,161	685	399	5.0	326	476	759	1,960	5.1	444
1988	683	436	1,167	822	425	4.9	311	482	683	1,901	5.1	599
1989	857	524	1,446	900	345	4.0	279	439	496	1,559	4.2	440
1990	850	479	1,394	1,107	331	3.8	265	383	590	1,569	4.2	536
AMERICAN INDIAN												
1980	412	151	568	160	48	0.4	27	33	42	150	0.3	13
1981	420	174	597	152	42	0.4	16	23	31	112	0.2	39
1982	245	119	367	102	32	0.4	21	32	37	122	0.3	30
1983	311	121	435	92	105	0.6	71	64	84	324	0.6	28
1984	258	130	393	68	65	0.4	50	51	55	221	0.4	31
1985	259	110	370	84	45	0.5	35	33	55	168	0.4	13
1986	213	92	308	82	39	0.4	32	38	58	167	0.4	17
1987	137	85	226	105	35	0.4	13	35	64	147	0.4	26
1988	156	65	226	91	44	0.5	24	49	84	201	0.5	57
1989	169	91	272	139	49	0.6	32	40	94	215	0.6	42
1990	95	55	156	110	57	0.7	32	46	60	195	0.5	35

* Totals include other years

SOURCE: Office of Personnel Management, unpublished tabulations

TABLE 7-37

FEDERAL WORKERS EMPLOYED IN ENGINEERING AND ARCHITECTURE BY OCCUPATIONAL TITLE, SEX AND MINORITY STATUS, SEPTEMBER 30, 1991

	ALL EMPLOYEES			TOTAL MINORITY				BLACK		HISPANIC		ASIAN		AM. INDIAN		WHITE	
OCCUPATIONAL TITLE	TOTAL	WOMEN	% W	TOTAL	%	WOMEN	% W	No.	% B	No.	% H	No.	% A	No.	% I	No.	% W
General Engineering	21523	1685	7.8	2871	13.3	372	13.0	784	3.6	725	3.4	1246	5.8	116	0.5	18652	86.7
Safety Engineering	566	46	8.1	103	18.2	18	17.5	30	5.3	37	6.5	33	5.8	3	0.5	463	81.8
Fire Protection. Eng	149	10	6.7	19	12.8	1	5.3	3	2.0	1	0.7	14	9.4	1	0.7	130	87.2
Materials Engineering	1324	220	16.6	168	12.7	42	25.0	36	2.7	31	2.3	98	7.4	3	0.2	1156	87.3
Landscape Architecture	719	200	27.8	33	4.6	8	24.2	8	1.1	9	1.3	12	1.7	4	0.6	686	95.4
Architecture	2041	287	14.1	485	23.8	68	14.0	194	9.5	96	4.7	177	8.7	18	0.9	1556	76.2
Civil Engineering	15082	1333	8.8	2191	14.5	270	12.3	410	2.7	599	4.0	1055	7.0	127	0.8	12891	85.5
Environmental Eng	4019	909	22.6	778	19.4	219	28.1	192	4.8	212	5.3	360	9.0	14	0.3	3,241	80.6
Mechanical Eng	13111	892	6.8	2169	16.5	204	9.4	439	3.3	409	3.1	1266	9.7	55	0.4	10,942	83.5
Nuclear Engineering	3709	227	6.1	532	14.3	47	8.8	72	1.9	44	1.2	404	10.9	12	0.3	3,177	85.7
Electrical Engineering	5133	459	8.9	1224	23.8	175	14.3	261	5.1	216	4.2	730	14.2	17	0.3	3,909	76.2
Computer Engineering	1978	388	19.6	358	18.1	78	0.0	121	6.1	86	4.3	144	7.3	7	0.4	1,620	81.9
Electronics Eng	30201	2346	7.8	5714		769	13.5	1232	4.1	1242	4.1	3130	10.4	110	0.4	24,487	81.1
Biomedical Eng	398	71	17.8	48	12.1	14	29.2	10	2.5	6	1.5	28	7.0	4	1.0	350	87.9
Aerospace Eng	9791	873	8.9	1072	10.9	131	12.2	283	2.9	293	3.0	470	4.8	26	0.3	8719	89.1
Naval Architecture	1181	88	7.5	178	15.1	18	10.1	33	2.8	18	1.5	126	10.7	1	0.1	1003	84.9
Mining Engineering	380	15	3.9	28	7.4	0	0.0	1	0.3	5	1.3	21	5.5	1	0.3	352	92.6
Petroleum Engineering	420	31	7.4	37	8.8	4	10.8	8	1.9	12	2.9	12	2.9	5	1.2	383	91.2
Agricultural Eng	388	20	5.2	24	6.2	2	8.3	3	0.8	5	1.3	10	2.6	6	1.5	364	93.8
Ceramic Engineering	72	12	16.7	7	9.7	0	0.0	2	2.8	0	0.0	5	6.9	0	0.0	65	90.3
Chemical Engineering	1510	279	18.5	266	17.6	66	24.8	52	3.4	57	3.8	152	10.1	5	0.3	1244	82.4
Welding Engineering	80	5	6.3	10	12.5	1	10.0	1	1.3	0	0.0	9	11.3	0	0.0	70	87.5
Industrial Engineering	2850	446	15.6	463	16.2	118	25.5	152	5.3	125	4.4	172	6.0	14	0.5	2387	83.8
TOTALS	116625	10842	9.3	18778	16.1	2625	14.0	4327	3.7	4228	3.6	9674	8.3	549	0.5	97847	83.9

FIELD: Agricultural Sciences

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 8-1

PhD AWARDS IN THE AGRICULTURAL SCIENCES BY SUBFIELD AND SEX, 1960 – 1991

Fields	Year of Doctorate																	
	1960–69			1970–79			1980–88			1989			1990			1991		
	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W
TOTAL	5560	60	1.1	9956	388	3.9	12662	1893	15.0	1254	254	20.3	1320	273	20.7	1236	245	19.8
Agricultural Economics(7)	90			1537	46	3.0	2592	375	14.5	164	25	15.2	144	27	18.8	165	36	21.8
Animal Breeding & Genetics(1)	1224	20	1.6	448	8	1.8	250	39	15.6	23	3	13.0	22	3	13.6	18	2	11.1
Animal Nutrition(2)							484	77	15.9	66	15	22.7	54	13	24.1	57	10	17.5
Dairy Science(8)							12	1	8.3	16	1	6.3	20	2	10.0	19	4	21.1
Poultry Science(8)							10	2	20.0	11	2	18.2	17	3	17.6	13	1	7.7
Fisheries Science(3)							259	38	14.7	34	5	14.7	42	6	14.3	39	4	10.3
Animal Sci/Nutrition(2)	1	1	100	880	52	5.9	401	47	11.7									
Animal Sciences, Other(2)							626	95	15.2	95	26	27.4	90	11	12.2	91	19	20.9
Agronomy	1566	6	0.4	1494	40	2.7	1532	153	10.0	140	20	14.3	143	21	14.7	117	11	9.4
Plant Breeding & Genetics(5)							556	85	15.3	64	13	20.3	87	20	23.0	69	10	14.5
Plant Pathology(5)							534	123	23.0	63	24	38.1	64	25	39.1	90	26	28.9
Plant Protection–Pest Mgmt(8)							1			7			4	1	25.0	2	0	0.0
Phytopathology(5)	871	29	3.3	943	72	7.6	331	62	18.7									
Plant Sciences, Other(5)							143	20	14.0	15	4	26.7	23	4	17.4	17	4	23.5
Food Science(9)	39	1	2.6	921	162	17.6	1110	309	27.8	1								
Food Engineering(8)							6	1	16.7	11	1	9.1	10	2	20.0	12	2	16.7
Food Sciences Other(8)							119	36	30.3	147	53	36.1	141	53	37.6	137	46	33.6
Soil Sciences(6)	40			781	20	2.6	825	71	8.6									
Soil Chemistry/Microbio(8)							33	7	21.2	28	7	25.0	27	6	22.2	24	6	25.0
Soil Sciences Other(8)							62	11	17.7	75	7	9.3	91	8	8.8	78	11	14.1
Horticulture Sciencs	589	13	2.2	645	32	5.0	729	140	19.2	75	19	25.3	101	27	26.7	78	19	24.4
Forestry Science(9)	466	1	0.2	792	13	1.6	850	79	9.3									
Forest Biology(8)							21	3	14.3	22	3	13.6	27	8	29.6	17	3	17.6
Forest Engineering(8)							3			1			2		0.0	2	1	50.0
Forest Management(8)							18	2	11.1	21	2	9.5	14	1	7.1	22	4	18.2
Wood Science(8)							7			16			16			16	2	
Renewable Natural Resouces(8)							7			16	1	6.3	16	3	18.8	19	3	15.8
Forestry & Related Sci Oth(8)							35	6	17.1	57	8	14.0	62	10	16.1	45	5	11.1
Fish & Wildlife(3)	226	1	0.4	570	16	2.8	204	23	11.3									
Wildlife(8)							26											
Wildlife/Range Mgmt(3)							194	17	8.8	52	10	19.2	58	6	10.3	59	8	13.6
Agriculture, General	45	1	2.2	56	4	7.1	49	5	10.2	7	2	28.6	5			3	1	
Agriculture, Other	403	8	2.0	889	29	3.3	633	66	10.4	27	3	7.4	40	13	32.5	27	7	25.9

(1) Called "Animal husbandry before 1983. (2) "Animal sciences" subfield introduced in 1972, name changed to "Animal science and animal nutrition" in 1977, split into two separate subfields in 1983, both dropped in 1988. (3) "Fish and wildlife" split iinto two separate subfields in 1983. (4) Introduced as "Food science and technology" in 1969, name changed to "Food sciences in 1983. (5) "Phytopathology" discontinued in 1982 and indicated subfields were introduced. (6) Called "Soils and soil science" before 1983, split out in 1988. (7) Added in 1969. (8) Added in 1988. (9) Included in other subfields in 1988.

FIELD: Biological Sciences

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 8-2

PhD AWARDS IN THE BIOLOGICAL SCIENCES BY SUBFIELD AND SEX, 1960 – 1991

	Year of Doctorate																	
	1960–69			1970–79			1980–88			1989			1990			1991		
Fields	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W
TOTAL	19571	2858	14.6	35618	7543	21.2	38368	12311	32.1	4106	1534	37.4	4333	1606	37.1	4642	1759	37.9
Biochemistry	3976	714	18.0	6116	1328	21.7	6133	1892	30.1	670	266	39.7	682	238	34.9	762	285	37.4
Biophysics	602	50	8.3	1178	142	12.1	869	148	15.3	87	21	24.1	103	23	22.3	99	26	26.3
Bacteriology(7)							88	26	26.5	12	3	25.0	15	4	26.7	11	5	45.5
Plant Genetics(4)							172	48	29.2	18	3	16.7	31	7	22.6	23	5	21.7
Plant Pathology(5)							226	53	20.9	22	8	36.4	37	11	29.7	50	12	24.0
Plant Physiology(6)	554	53	9.6	702	111	15.8	616	158	25.2	47	15	31.9	51	19	37.3	65	19	29.2
Botany(1)	1384	193	13.9	1745	359	20.6	437	122	27.9									
Botany, other (1)							821	264	31.0	117	52	44.4	104	33	31.7	105	38	36.2
Anatomy	679	123	18.1	1349	323	23.9	1201	417	33.5	79	26	32.9	70	29	41.4	77	31	40.3
Biometrics & Biostatistics	177	24	13.6	406	85	20.9	437	146	33.1	46	20	43.5	47	17	36.2	59	29	49.2
Cell Biology(2)							816	321	37.0	132	57	43.2	145	69	47.6	150	63	42.0
Cytology(2)	244	75	30.7	422	150	35.5	132	45	34.1									
Ecology	477	18	3.8	1435	163	11.4	1821	441	23.6	162	37	22.8	166	52	31.3	190	60	31.6
Developmental Bio/Embryol.	217	69	31.8	252	77	30.6	128	55	45.2	10	4	40.0	22	12	54.5	37	20	54.1
Endocrinology(3)							149	60	35.8	21	10	47.6	24	11	45.8	33	16	48.5
Entomology	1223	58	4.7	1726	115	6.7	1543	252	15.6	138	22	15.9	147	26	17.7	138	35	25.4
Hydrobiology	95	4	4.2	155	14	9.0												
Immunology				630	196	31.1	1412	576	39.5	152	61	40.1	153	72	47.1	177	76	42.9
Molecular Biology	91	19	20.9	1365	395	28.9	2612	937	35.6	407	152	37.3	410	148	36.1	481	182	37.8
Microbiology/Bacteriology(7)	2601	473	18.2	3703	932	25.2	1044	312	29.9									
Microbiology(7)							2186	802	37.4	340	123	36.2	335	114	34.0	373	150	40.2
Neurosciences							1143	390	34.4	181	63	34.8	192	76	39.6	239	88	36.8
Nutritional Sciences(8)	27	7	25.9	364	213	58.5	1145	746	64.1	128	90	70.3	118	88	74.6	106	71	67.0
Parasitology				133	21	15.8	196	38	15.6	20	5	25.0	13	4	30.8	20	7	35.0
Toxicology(3)							680	186	26.7	110	38	34.5	91	36	39.6	86	30	34.9
Genetics(4)	1060	160	15.1	1424	390	27.4	490	182	37.1									
Human & Animal Genetics(4)							709	332	46.2	112	57	50.9	153	73	47.7	160	71	44.4
Pathology(5)	324	18	5.6	793	126	15.9	311	81	26.0									
Human & Animal Pathology(5)							729	236	30.0	103	40	38.8	101	32	31.7	120	45	37.5
Human & Animal Pharmacology	958	98	10.2	1852	295	15.9	2447	740	28.7	238	98	41.2	243	90	37.0	262	90	34.4
Animal/plant Physiology(6)	307	32	10.4															
Animal Physiology(6)	1628	242	14.9	3286	576	17.5	976	224	23.0									
Human & Animal Physiology(6)							1669	502	28.3	271	104	38.4	276	97	35.1	272	102	37.5
Zoology(9)	2242	311	13.9	2906	504	17.3	623	138										
Zoology,other(9)							1105	328	30.2	133	35	26.3	122	36	29.5	126	39	31.0
Biological Sci, General	230	46	20.0	1738	475	27.3	2055	678	31.6	236	79	33.5	340	142	41.8	278	112	40.3
Biological Sci, Other	380	67	17.6	1783	539	30.2	1247	435	34.9	114	45	39.5	142	47	33.1	143	52	36.4

(1) Called "Botany" before 1983. (2) "Cytology" introduced in 1962, discontinued in 1983. "Cell biology" introduced in 1983. (3) Introduced in 1983. (4) "Genetics" split into "Plant genetics" & "Human and animal genetics in 1983. (5) "Pathology" split into "Plant pathology" & "Human and animal pathology" in 1983. (6) In 1962 "Animal and plant physiology" was split into "Animal Physiology" and "Plant physiology." In 1983 "Animal physiology" was replaced by "Human and animal physiology." (7) Originally called "Microbiology." "Bacterioloby" added in 1970. In 1983 they were split into separate subfields. (8) "Nutriton" discontinued in 1963. "Nutrition and dietetics" introduced in 1976, then replaced by "Nutrition Sciences" in 1983. (9) "Zoology" discontinued in 1983 and "Zoology, other" introduced.

SOURCE: Science and Engineering Doctorates, National Science Foundation and Summary Reports on Doctorate Recipients from United States Universities, National Research Council

TABLE 8-3

AGRICULTURAL SCIENCES DOCTORATES BY RACE/ETHNICITY, 1975 – 1990

(U.S. Citizens and Non.U.S. Permanent Visa–Holders)

Year	All Races*				White		%	Black		Hispanic		Am. Indian		U Rep	Asian		
	Total	Men	Wom	%W	Men	Wom	Wh	Men	Wom	Men	Wom	Men	Wom	Min %	Men	Wom	%A
1975	633	596	37	5.8	533	28	88.6	5	0	3	1	0	0	1.4	39	7	7.3
1976	536	496	40	7.5	455	32	90.9	7	1	3	1	1	0	2.4	16	4	3.7
1977	514	479	35	6.8	427	31	89.1	13	2	4	0	1	0	3.9	19	2	4.1
1978	573	534	39	6.8	456	30	84.8	10	1	7	2	2	0	3.8	31	6	6.5
1979	573	517	56	9.8	456	47	87.8	8	1	4	2	0	0	2.6	19	4	4.0
1980	605	526	79	13.1	470	69	89.1	7	0	1	4	1	0	2.1	22	6	4.6
1981	629	537	92	14.6	467	84	87.6	11	0	15	0	1	0	4.3	20	5	4.0
1982	670	544	126	18.8	505	111	91.9	6	1	5	2	2	1	2.5	14	9	3.4
1983	685	580	105	15.3	525	88	89.5	11	1	5	1	1	0	2.8	24	9	4.8
1984	660	560	100	15.2	510	92	91.2	15	3	8	0	1	0	4.1	16	4	3.0
1985	726	600	126	17.4	546	113	90.8	15	1	8	4	4	0	4.4	19	5	3.3
1986	627	504	123	19.6	447	110	88.8	13	3	11	6	0	0	5.3	18	4	3.5
1987	630	505	125	19.8	444	108	87.6	10	3	11	4	2	0	4.8	31	7	6.0
1988	610	482	128	21.0	408	110	84.9	15	5	19	2	4	2	7.7	23	7	4.9
1989	651	486	165	25.3	420	150	87.6	13	1	15	3	1	1	5.2	17	6	3.5
1990	681	522	159	23.3	488	153	94.1	11	1	11	3	4	0	4.4	8	2	1.5
Totals	10,003	8,468	1,535	15.3	7,557	1,356	89.1	170	24	130	35	25	4	3.9	336	87	4.2

* The data for 'All Races' may include a few recipients whose race/ethnicity was unknown.

SOURCE: Science and Engineering Doctorates, National Science Foundation and Summary Reports on Doctorate Recipients from United States Universities, National Research Council

TABLE 8-4

BIOLOGICAL SCIENCES DOCTORATES BY RACE/ETHNICITY, 1975 – 1990

(U.S. Citizens and Non.U.S. Permanent Visa–Holders)

Year	All Races*				White		%	Black		Hispanic		Am. Indian		U Rep	Asian		
	Total	Men	Wom	%W	Men	Wom	Wh	Men	Wom	Men	Wom	Men	Wom	Min %	Men	Wom	%A
1975	2,973	2,249	724	24.4	2,099	651	92.5	33	16	28	4	0	1	2.8	89	52	4.7
1976	3,016	2,332	684	22.7	2,176	613	92.5	32	21	22	3	2	0	2.7	100	47	4.9
1977	2,948	2,268	680	23.1	2,124	616	92.9	18	18	17	8	5	2	2.3	104	36	4.7
1978	2,943	2,191	752	25.6	2,039	663	91.8	31	24	20	10	5	0	3.1	96	55	5.1
1979	3,071	2,250	821	26.7	2,099	731	92.2	15	20	27	11	3	0	2.5	106	59	5.4
1980	3,229	2,319	910	28.2	2,155	817	92.0	32	19	24	7	3	2	2.7	105	65	5.3
1981	3,268	2,314	954	29.2	2,163	852	92.3	22	28	28	13	5	1	3.0	96	60	4.8
1982	3,324	2,311	1,013	30.5	2,153	909	92.1	24	25	30	17	4	3	3.1	100	59	4.8
1983	3,252	2,144	1,108	34.1	2,007	988	92.1	24	22	22	21	3	1	2.9	88	76	5.0
1984	3,306	2,234	1,072	32.4	2,085	959	92.1	24	26	29	15	7	3	3.1	89	69	4.8
1985	3,185	2,125	1,060	33.3	1,959	950	91.3	32	21	36	23	4	9	3.9	94	57	4.7
1986	3,182	2,085	1,097	34.5	1,909	976	90.7	26	22	39	27	11	6	4.1	100	66	5.2
1987	3,052	1,935	1,117	36.6	1,762	988	90.1	35	25	38	24	7	4	4.4	93	76	5.5
1988	3,319	2,068	1,251	37.7	1,849	1,113	89.2	25	23	49	27	4	2	3.9	98	73	5.2
1989	3,277	2,013	1,264	38.6	1,777	1,110	88.1	29	23	51	21	4	3	4.0	110	88	6.0
1990	3,058	1,862	1,196	39.1	1,729	1,113	92.9	12	16	44	28	2	1	3.4	75	38	3.7
Totals	50,403	34,700	15,703	31.2	32,085	14,049	91.5	414	349	504	259	69	38	3.2	1,543	976	5.0

* The data for 'All Races' may include a few recipients whose race/ethnicity was unknown.

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 8-5

AGRCULTURAL SCIENCES PhDs BY SEX AND RACE/ETHNICITY, 1985 – 1991

(U.S. Citizens Only)

					White		Black		Hispanic		Indian		Asian		
Year	Total	Men	Wom	%Wom	Men	Women	Men	Wom	Men	Wom	Men	Wom	Men	Wom	%Min
1985	766	633	133	17.4	594	124	8	1	9	4	4	0	7	1	4.4
1986	657	529	128	19.5	497	119	4	3	5	3	0	0	11	3	4.4
1987	653	521	132	20.2	485	118	5	3	9	5	2	0	16	4	6.7
1988	619	479	140	22.6	441	125	5	5	12	1	4	3	7	4	6.6
1989	687	511	176	25.6	471	164	6	1	10	4	1	1	4	3	4.4
1990	697	535	162	23.2	490	155	11	1	11	3	4	0	9	3	6.0
1991	616	473	143	23.2	443	136	5	1	6	2	4	0	7	2	4.4

TABLE 8-6

BIOLOGICAL SCIENCES PhDs BY SEX AND RACE/ETHNICITY, 1985 – 1991

(U.S. Citizens Only)

					White		Black		Hispanic		Indian		Asian		
Year	Total	Men	Wom	%Wom	Men	Women	Men	Wom	Men	Wom	Men	Wom	Men	Wom	%Min
1985	3148	2116	1032	32.8	1943	926	24	20	28	21	4	9	67	39	6.7
1986	3124	2049	1075	34.4	1880	960	21	19	29	23	11	6	72	52	7.5
1987	2981	1904	1077	36.1	1726	970	23	22	33	19	7	4	61	45	7.2
1988	3131	1960	1171	37.4	1798	1080	18	18	39	22	4	2	64	37	6.5
1989	3117	1927	1190	38.2	1745	1087	22	23	44	15	4	3	73	47	7.4
1990	3192	1958	1234	38.7	1776	1135	16	20	44	28	3	1	77	39	7.1
1991	3248	1987	1261	38.8	1798	1117	20	24	44	34	6	4	88	66	8.8

TABLE 8-7

HEALTH SCIENCES PhDs BY SEX AND RACE/ETHNICITY, 1985 – 1991

(U.S. Citizens Only)

					White		Black		Hispanic		Indian		Asian		
Year	Total	Men	Wom	%Wom	Men	Women	Men	Wom	Men	Wom	Men	Wom	Men	Wom	%Min
1985	550	171	379	68.9	148	346	5	12	6	7	1	1	5	9	8.4
1986	568	157	411	72.4	133	375	3	14	5	7	0	6	8	7	8.8
1987	606	207	399	65.8	180	356	7	18	3	8	1	2	11	8	9.6
1988	657	196	461	70.2	177	419	3	23	6	5	1	4	9	7	8.8
1989	729	207	522	71.6	191	484	4	20	3	7	0	3	6	5	6.6
1990	723	222	501	69.3	199	451	7	18	2	15	1	0	12	14	9.5
1991	765	218	547	71.5	184	496	13	22	3	8	3	2	10	13	9.7

FIELD: Life Sciences

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 8-8

PhD DEGREES IN THE LIFE SCIENCES BY SEX AND SUBFIELD, 1950 – 1991

	Total Life Sciences				Life Sciences Fields									
					Agricultural					Biological				
Year	No.	Men	Wom	%W	No.	%Ag	Men	Wom	%W	No.	%Bi	Men	Wom	%W
1950	1033	938	95	9	368	36	364	4	1.1	665	64	574	91	14
1951	1192	1090	102	9	379	32	376	3	0.8	813	68	714	99	12
1952	1187	1093	94	8	412	35	402	10	2.4	775	65	691	84	11
1953	1443	1320	123	9	473	33	468	5	1.1	970	67	852	118	12
1954	1628	1517	111	7	515	32	508	7	1.4	1113	68	1009	104	9
1955	1505	1398	107	7	507	34	499	8	1.6	998	66	899	99	10
1956	1404	1281	123	9	379	27	373	6	1.6	1025	73	908	117	11
1957	1449	1327	122	8	341	24	331	10	2.9	1108	76	996	112	10
1958	1465	1321	144	10	340	23	334	6	1.8	1125	77	987	138	12
1959	1427	1307	120	8	376	26	368	8	2.1	1051	74	939	112	11
50–59	13,733	12,592	1,141	8	4,090	30	4,023	67	1.6	9,643	70	8,569	1,074	11
1960	1647	1521	126	8	440	27	433	7	1.6	1207	73	1088	119	10
1961	1646	1502	144	9	450	27	443	7	1.6	1196	73	1059	137	11
1962	1804	1643	161	9	465	26	463	2	0.4	1339	74	1180	159	12
1963	1908	1724	184	10	449	24	441	8	1.8	1459	76	1283	176	12
1964	2181	1978	203	9	555	25	545	10	1.8	1626	75	1433	193	12
1965	2474	2228	246	10	529	21	516	13	2.5	1945	79	1712	233	12
1966	2696	2382	314	12	588	22	581	7	1.2	2108	78	1801	307	15
1967	2900	2546	354	12	637	22	625	12	1.9	2263	78	1921	342	15
1968	3445	2993	452	13	648	19	636	12	1.9	2797	81	2357	440	16
1969	3779	3295	484	13	699	18	687	12	1.7	3080	82	2608	472	15
60–69	24,480	21,812	2,668	11	5,460	22	5,370	90	1.6	19,020	78	16,442	2,578	14
1970	4131	3632	499	12	823	20	795	28	3.4	3308	80	2837	471	14
1971	4534	3910	624	14	874	19	846	28	3.2	3660	81	3064	596	16
1972	4478	3831	647	14	805	18	783	22	2.7	3673	82	3048	625	17
1973	4524	3790	734	16	869	19	848	21	2.4	3655	81	2942	713	20
1974	4220	3488	732	17	765	18	736	29	3.8	3455	82	2752	703	20
1975	4252	3470	782	18	832	20	801	31	3.7	3420	80	2669	751	22
1976	4203	3412	791	19	768	18	714	54	7.0	3435	82	2698	737	21
1977	4199	3408	791	19	753	18	699	54	7.2	3446	82	2709	737	21
1978	4179	3307	872	21	810	19	755	55	6.8	3369	81	2552	817	24
1979	4403	3429	974	22	804	18	743	61	7.6	3599	82	2686	913	25
70–79	43,123	35,677	7,446	17	8,103	19	7,720	383	4.7	35,020	81	27,957	7,063	20
1980	4495	3445	1050	23	827	18	729	98	11.9	3668	82	2716	952	26
1981	4669	3501	1168	25	910	19	797	113	12.4	3759	81	2704	1055	28
1982	4693	3460	1233	26	919	20	788	131	14.3	3774	80	2672	1102	29
1983	4350	3146	1204	28	986	23	860	126	12.8	3364	77	2286	1078	32
1984	4448	3253	1195	27	997	23	864	133	13.7	3880	77	2665	1215	31
1985	4489	3211	1278	28	1111	24	940	171	14.5	3792	76	2554	1238	33
1986	4352	3046	1306	30	998	23	826	172	17.8	3807	77	2527	1280	34
1987	4812	3281	1531	32	976	20	805	171	17.5	3836	80	2476	1360	35
1988	5123	3434	1689	33	1015	20	829	186	18.3	4108	80	2605	1503	37
1989	5194	3431	1763	34	1088	21	859	229	21.0	4106	79	2572	1534	37
80–89	46,625	33,208	13,417	29	9,827	21	8,297	1,530	15.6	38,094	82	25,777	12,317	32
1990	5653	3774	1879	33	1320	23	1047	273	20.7	4333	77	2727	1606	37
1991	5879	3875	2004	34	1237	21	992	245	19.8	4642	79	2883	1759	38
Total	133,840	107,164	26,676	20	28,717	21	26,402	2,315	8.1	106,419	80	81,628	24,791	23

FIELD: Life Sciences

SOURCE: Earned Degrees Conferred Series, 1950–89, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 8-9

MASTERS DEGREES IN THE BIOLOGICAL/AGRICULTURAL SCIENCES BY SUBFIELD AND SEX, 1950 – 1990

	Total Biological/Agricultural				Agricultural/Nat Resources					Biological/Life				
Year	No.	Men	Women	%W	No.	%Ag	Men	Women	%W	No.	%Bio	Men	Women	%W
1950	4158	3624	534	13	1505	36	1492	13	0.9	2653	64	2132	521	19.6
1951	4417	3890	527	12	1568	35	1540	28	1.8	2849	65	2350	499	17.5
1952	4184	3717	467	11	1608	38	1578	30	1.9	2576	62	2139	437	17.0
1953	3568	3158	410	11	1470	41	1438	32	2.2	2098	59	1720	378	18.0
1954	3007	2649	358	12	1302	43	1279	23	1.8	1705	57	1370	335	19.6
1955	3090	2657	433	14	1364	44	1336	28	2.1	1726	56	1321	405	23.5
1956	2867	2461	406	14	1038	36	1021	17	1.6	1829	64	1440	389	21.3
1957	3019	2616	403	13	1122	37	1103	19	1.7	1897	63	1513	384	20.2
1958	3179	2721	458	14	1104	35	1089	15	1.4	2075	65	1632	443	21.3
1959	3537	2976	561	16	1183	33	1166	17	1.4	2354	67	1810	544	23.1
1960	3751	3178	573	15	1203	32	1190	13	1.1	2548	68	1988	560	22.0
1961	4085	3415	670	16	1241	30	1212	29	2.3	2844	70	2203	641	22.5
1962	4672	3887	785	17	1357	29	1321	36	2.7	3315	71	2566	749	22.6
1963	4718	3824	894	19	1261	27	1232	29	2.3	3457	73	2592	865	25.0
1964	5357	4273	1084	20	1344	25	1302	42	3.1	4013	75	2971	1042	26.0
1965	5978	4816	1162	19	1366	23	1330	36	2.6	4612	77	3486	1126	24.4
1966	5901	4681	1220	21	1666	28	1594	72	4.3	4235	72	3,087	1,148	27.1
1967	6764	5408	1356	20	1761	26	1687	74	4.2	5003	74	3,721	1,282	25.6
1968	7324	5693	1631	22	1807	25	1730	77	4.3	5517	75	3,963	1,554	28.2
1969	7838	6070	1768	23	2073	26	1974	99	4.8	5765	74	4,096	1,669	29.0
1970	7642	5677	1965	26	1807	24	1686	121	6.7	5835	76	3,991	1,844	31.6
1971	8320	6130	2190	26	2040	25	1910	130	6.4	6280	75	4,220	2,060	32.8
1972	8914	6587	2327	26	2280	26	2102	178	7.8	6634	74	4,485	2,149	32.4
1973	9080	6843	2237	25	2391	26	2188	203	8.5	6689	74	4,655	2,034	30.4
1974	9605	7195	2410	25	2524	26	2258	266	10.5	7081	74	4,937	2,144	30.3
1975	9618	7207	2411	25	2687	28	2349	338	12.6	6931	72	4,858	2,073	29.9
1976	9823	7204	2619	27	2884	29	2458	426	14.8	6939	71	4,746	2,193	31.6
1977	10707	7696	3011	28	3239	30	2740	499	15.4	7468	70	4,956	2,512	33.6
1978	10711	7485	3226	30	3484	33	2790	694	19.9	7227	67	4,695	2,532	35.0
1979	10719	7259	3460	32	3499	33	2749	750	21.4	7220	67	4,510	2,710	37.5
1980	10278	6952	3326	32	3424	33	2627	797	23.3	6854	67	4,325	2,529	36.9
1981	9731	6451	3280	34	3432	35	2,598	834	24.3	6299	65	3,853	2,446	38.8
1982	9824	6315	3509	36	3640	37	2,694	946	26.0	6184	63	3,621	2,563	41.4
1983	9720	6111	3609	37	3679	38	2,690	989	26.9	6041	62	3,421	2,620	43.4
1984	9330	5728	3602	39	3613	39	2,561	1,052	29.1	5717	61	3,167	2,550	44.6
1985	8757	5265	3492	40	3412	39	2,456	956	28.0	5345	61	2,809	2,536	47.4
1986	8572	5022	3550	41	3283	38	2,280	1,003	30.6	5289	62	2,742	2,547	48.2
1987	8831	5180	3651	41	3571	40	2,496	1,075	30.1	5260	60	2,684	2,576	49.0
1988	8559	5011	3548	41	3497	41	2,441	1,056	30.2	5062	59	2,570	2,492	49.2
1989	7727	4364	3363	44	2794	36	1,880	914	32.7	4933	64	2,484	2,449	49.6
1990	8004	4384	3620	45	2894	36	1,885	1,009	34.9	5110	64	2,499	2,611	51.1
50–59	35,026	30,469	4,557	13	13,264	38	13,042	222	1.7	21,762	62	17,427	4,335	19.9
60–69	56,388	45,245	11,143	20	15,079	27	14,572	507	3.4	41,309	73	30,673	10,636	25.7
70–79	95,139	69,283	25,856	27	26,835	28	23,230	3,605	13.4	68,304	72	46,053	22,251	32.6
80–89	91,329	56,399	34,930	38	34,345	38	24,723	9,622	28.0	56,984	62	31,676	25,308	44.4
TOTAL	285,886	205,780	80,106	28	92,417	32	77,452	14,965	16.2	193,469	68	128,328	65,141	33.7

Field: Life Sciences

SOURCE: Earned Degrees Conferred Series, 1950–90, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 8-10

BACHELORS DEGREES IN THE BIOLOGICAL/AGRICULTURAL SCIENCES BY SUBFIELD AND SEX, 1950 – 1990

	Total Biological/Agricultural				Agricultural/Nat Resources					Biological/Life				
Year	No.	Men	Women	%W	No.	%Ag	Men	Women	%W	No.	%Bio	Men	Women	%W
1950	39,101	34,173	4,928	12.6	14,999	38	14,837	162	1.1	24,102	62	19336	4766	19.8
1951	32,271	28,018	4,253	13.2	12,165	38	12,020	145	1.2	20,106	62	15998	4108	20.4
1952	25,231	21,426	3,805	15.1	9,595	38	9,451	144	1.5	15,636	62	11975	3661	23.4
1953	21,835	18,360	3,475	15.9	8,825	40	8,674	151	1.7	13,010	60	9686	3324	25.5
1954	21,584	18,079	3,505	16.2	7,832	36	7,687	145	1.9	13,752	64	10392	3360	24.4
1955	19,927	16,677	3,250	16.3	7,170	36	7,052	118	1.6	12,757	64	9625	3132	24.6
1956	19,890	16,508	3,382	17.0	6,117	31	6,002	115	1.9	13,773	69	10506	3267	23.7
1957	21,903	18,327	3,576	16.3	6,619	30	6,465	154	2.3	15,284	70	11862	3422	22.4
1958	23,069	19,399	3,670	15.9	6,769	29	6,677	92	1.4	16,300	71	12722	3578	22.0
1959	23,861	19,734	4,127	17.3	6,767	28	6,692	75	1.1	17,094	72	13042	4052	23.7
1960	24,141	19,650	4,491	18.6	6,335	26	6,242	93	1.5	17,806	74	13408	4398	24.7
1961	23,900	19,078	4,822	20.2	5,717	24	5,647	70	1.2	18,183	76	13431	4752	26.1
1962	25,200	19,730	5,470	21.7	5,894	23	5,804	90	1.5	19,306	77	13926	5380	27.9
1963	27,801	21,627	6,174	22.2	6,063	22	5,951	112	1.8	21,738	78	15676	6062	27.9
1964	31,611	24,398	7,213	22.8	6,194	20	6,069	125	2.0	25,417	80	18329	7088	27.9
1965	34,842	26,565	8,277	23.8	6,770	19	6,600	170	2.5	28,072	81	19965	8107	28.9
1966	34,183	26,409	7,774	22.7	7,173	21	7,019	154	2.1	27,010	79	19,390	7,620	28.2
1967	36,815	28,591	8,224	22.3	7,865	21	7,688	177	2.3	28,950	73	20,903	8,047	27.8
1968	40,383	31,167	9,216	22.8	8,328	21	8,060	268	3.2	32,055	74	23,107	8,948	27.9
1969	45,551	35,184	10,367	22.8	9,995	22	9,594	401	4.0	35,556	73	25,590	9,966	28.0
1970	49,045	38,034	11,011	22.5	11,369	23	10,872	497	4.4	37,676	72	27,162	10,514	27.9
1971	51,461	39,658	11,803	22.9	11,531	22	11,003	528	4.6	39,930	78	28,655	11,275	28.2
1972	53,484	40,790	12,694	23.7	12,488	23	11,761	727	5.8	40,996	77	29,029	11,967	29.2
1973	59,486	44,916	14,570	24.5	13,838	23	12,751	1,087	7.9	45,648	77	32,165	13,483	29.5
1974	68,226	50,390	17,836	26.1	15,125	22	13,586	1,539	10.2	53,101	78	36,804	16,297	30.7
1975	72,710	51,899	20,811	28.6	16,531	23	14,103	2,428	14.7	56,179	77	37,796	18,383	32.7
1976	77,301	53,512	23,789	30.8	18,269	24	14,798	3,491	19.1	59,012	76	38,714	20,298	34.4
1977	78,472	52,863	25,609	32.6	20,199	26	15,538	4,661	23.1	58,273	74	37,325	20,948	35.9
1978	77,138	50,184	26,954	34.9	21,027	27	15,610	5,417	25.8	56,111	73	34,574	21,537	38.4
1979	75,085	47,537	27,548	36.7	21,631	29	15,540	6,091	28.2	53,454	71	31,997	21,457	40.1
1980	71,617	44,021	27,596	38.5	21,121	29	14,616	6,506	30.8	50,496	71	29,405	21,091	41.8
1981	68,066	40,610	27,476	40.4	20,166	30	13,712	6,454	32.0	47,920	72	26,898	21,022	43.9
1982	65,041	38,115	26,926	41.4	19,235	30	12,974	6,261	32.6	45,806	72	25,141	20,665	45.1
1983	63,237	36,677	26,560	42.0	19,170	30	12,715	6,455	33.7	44,067	71	23,962	20,105	45.6
1984	59,613	34,253	25,360	42.5	17,303	29	11,600	5,703	33.0	42,310	76	22,653	19,657	46.5
1985	57,812	32,664	25,148	43.5	15,879	27	10,742	5,137	32.4	41,933	77	21,922	20,011	47.7
1986	56,465	31,643	24,822	44.0	14,740	26	9,941	4,799	32.6	41,725	78	21,702	20,023	48.0
1987	56,215	31,592	24,623	43.8	15,082	27	10,377	4,705	31.2	41,133	80	21,215	19,918	48.4
1988	54,260	29,731	24,549	45.2	14,331	26	9,820	4,511	31.5	39,949	74	19,911	20,038	50.2
1989	47,817	25,936	21,881	45.8	11,739	25	7,966	3,772	32.1	36,079	75	17,970	18,109	50.2
1990	50,783	27,253	23,530	46.3	11,435	23	7,724	3,711	32.5	39,348	77	19,529	19,819	50.4
50–59	248,672	210,701	37,971	15.3	86,858	35	85,557	1,301	1.5	161,814	65	125,144	36,670	22.7
60–69	333,059	252,399	72,028	21.6	70,334	21	64,389	1,276	1.8	254,093	76	172,295	66,267	26.1
70–79	665,492	469,783	192625	28.9	162028	24	70,190	1,540	1.0	500,380	75	193,900	76,200	15.2
80–89	600,183	345,242	254,941	42.5	168,765	28	114,463	54,302	32.2	431,418	72	230,779	200,639	46.5
TOTAL	1,896,189	1,306,378	581,095	30.6	499,420	26	342,323	62,130	12.4	1,367,053	73	741,647	399,595	28.9

FIELD: Biological Sciences

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 8-11

AGRICULTURAL SCIENCES PhD AWARDS BY CITIZENSHIP AND VISA TYPE 1960 – 1991

YEAR	TOTAL	U.S.		Foreign						Citizen–ship Unknown
				Total		Perm Visa		Temp Visa		
		No.	%	No.	%	No.	%	No.	%	
1960	414	306	73.9	107	25.8	16	3.9	91	22.0	1
1961	438	338	77.2	98	22.4	6	1.4	92	21.0	2
1962	470	344	73.2	126	26.8	14	3.0	112	23.8	
1963	466	365	78.3	97	20.8	7	1.5	90	19.3	4
1964	517	366	70.8	149	28.8	14	2.7	135	26.1	2
1965	576	380	66.0	189	32.8	17	3.0	172	29.9	7
1966	576	379	65.8	186	32.3	11	1.9	175	30.4	11
1967	606	408	67.3	195	32.2	13	2.1	182	30.0	3
1978	681	450	66.1	225	33.0	29	4.3	196	28.8	6
1969	720	488	67.8	229	31.8	28	3.9	201	27.9	3
1970	804	564	70.1	237	29.5	38	4.7	199	24.8	3
1971	902	597	66.2	302	33.5	65	7.2	237	26.3	3
1972	853	533	62.5	316	37.0	85	10.0	231	27.1	4
1973	854	543	63.6	308	36.1	75	8.8	233	27.3	3
1874	820	461	56.2	336	41.0	65	7.9	271	33.0	23
1975	904	563	62.3	336	37.2	70	7.7	266	29.4	5
1976	788	491	62.3	281	35.7	37	4.7	244	31.0	16
1977	782	488	62.4	283	36.2	27	3.5	256	32.7	11
1978	853	531	62.3	310	36.3	43	5.0	267	31.3	12
1979	855	544	63.5	294	34.4	29	3.4	265	31.0	17
1980	912	570	62.1	331	36.5	35	3.9	296	32.6	11
1981	982	594	59.6	360	37.7	35	4.0	325	33.7	28
1982	951	647	65.6	283	32.2	23	2.8	260	29.4	21
1983	1,015	649	62.1	343	35.1	36	3.8	307	31.2	23
1984	997	625	60.4	349	37.0	35	3.8	314	33.2	23
1985	1,111	683	60.9	402	35.8	47	3.7	355	32.0	26
1986	998	579	56.8	368	37.5	48	4.7	320	32.8	51
1987	976	584	58.5	337	35.2	48	5.3	289	29.9	55
1988	1,015	539	53.1	416	41.0	71	7.0	345	34.0	60
1989	1,088	606	55.7	400	36.8	45	4.1	355	32.6	82
1990	1,320	688	52.1	549	41.6	64	4.8	485	36.7	83
1991	1,237	616	49.8	567	45.8	72	5.8	495	40.0	54
TOTAL	26,481	16,519	62.4	9,309	35.2	1,248	4.7	8,061	30.4	653

TABLE 8-12

BIOLOGICAL SCIENCES PhD AWARDS BY CITIZENSHIP AND VISA TYPE 1960 – 1991

YEAR	TOTAL	U.S.		Foreign						Citizen–ship Unknown
				Total		Perm Visa		Temp Visa		
		No.	%	No.	%	No.	%	No.	%	
1960	1,246	1,048	84.1	188	15.1	40	3.2	148	11.9	10
1961	1,244	1,020	82.0	208	16.7	35	2.8	173	13.9	16
1962	1,397	1,167	83.5	215	15.4	14	1.0	201	14.4	15
1963	1,510	1,252	82.9	246	16.3	37	2.5	209	13.8	12
1964	1,702	1,376	80.8	293	17.2	43	2.5	250	14.7	33
1965	1,963	1,583	80.6	360	18.3	53	2.7	307	15.6	20
1966	2,135	1,740	81.5	365	17.1	52	2.4	313	14.7	30
1967	2,361	1,947	82.5	378	16.0	80	3.4	298	12.6	36
1978	2,822	2,324	82.4	470	16.7	111	3.9	359	12.7	28
1969	3,084	2,586	83.9	463	15.0	123	4.0	340	11.0	35
1970	3,359	2,813	83.7	522	15.5	161	4.8	361	10.7	24
1971	3,652	3,063	83.9	511	14.0	199	5.4	312	8.5	78
1972	3,663	3,049	83.2	535	14.6	225	6.1	310	8.5	79
1973	3,731	3,085	82.7	570	15.3	251	6.7	319	8.5	76
1874	3,585	2,829	78.9	587	16.4	217	6.1	370	10.3	169
1975	3,636	3,024	83.2	532	14.6	202	5.6	330	9.1	80
1976	3,692	3,090	83.7	500	13.5	170	4.6	330	8.9	102
1977	3,484	2,909	83.5	479	13.7	160	4.6	319	9.2	96
1978	3,508	2,988	85.2	432	12.3	142	4.0	290	8.3	88
1979	3,646	3,130	85.7	429	11.8	132	3.6	297	8.2	87
1980	3,803	3,279	86.3	392	11.5	151	3.7	296	7.8	132
1981	3,804	3,279	86.6	363	10.7	124	3.3	288	7.4	162
1982	3,893	3,317	84.9	417	11.9	117	3.0	334	8.9	159
1983	3,741	3,210	85.6	437	11.7	114	3.1	322	8.6	94
1984	3,880	3,285	84.7	473	12.2	114	2.9	361	9.3	122
1985	3,792	3,143	83.0	531	14.1	108	2.9	422	11.2	118
1986	3,807	3,124	82.3	504	13.3	117	3.0	391	10.3	179
1987	3,836	2,982	77.7	647	16.9	160	4.1	492	12.8	207
1988	4,108	3,127	76.1	748	18.2	192	4.7	556	13.5	233
1989	4,106	3,100	75.5	776	18.9	177	4.3	599	14.6	230
1990	4,333	3,106	71.7	1,226	28.3	182	4.2	821	18.9	225
1991	4,642	3,248	70.0	1,234	26.6	207	4.5	1,027	22.1	160
TOTAL	103,165	84,223	81.6	16,033	15.5	4,210	4.1	11,745	11.4	3,135

SOURCE: Office of Personnel Management, unpublished tabulations

TABLE 8-13

FEDERAL WORKERS EMPLOYED IN THE BIOLOGICAL/AGRICULTURAL SCIENCES BY OCCUPATIONAL TITLE, SEX AND MINORITY STATUS, SEPTEMBER, 1991

	ALL EMPLOYEES			TOTAL MINORITY				BLACK		HISPANIC		ASIAN		AM. INDIAN		WHITE	
OCCUPATIONAL TITLE	TOTAL	WOMEN	% W	TOTAL	%	WOMEN	% W	No.	% B	No.	% H	No.	% A	No.	% I	No.	% W
Gen. Biological Science	7987	2250	28.2	975	12.2	350	35.9	366	4.6	167	2.1	352	4.4	90	1.1	7012	87.8
Microbiology	2270	926	40.8	388	17.1	180	46.4	125	5.5	59	2.6	200	8.8	4	0.2	1882	82.9
Pharmacology	456	116	25.4	100	21.9	31	31.0	21	4.6	8	1.8	70	15.4	1	0.2	356	78.1
Agricultural Extension	65	20	30.8	5	7.7	1	20.0	3	4.6	1	1.5	0	0.0	1	1.5	60	92.3
Ecology	585	158	27.0	26	4.4	9	34.6	9	1.0	11	1.9	4	0.7	2	0.3	559	95.6
Zoology	118	20	16.9	6	5.1	2	33.3	3	2.5	2	1.7	1	0.8	0	0.0	112	94.9
Physiology	652	159	24.4	70	10.7	21	30.0	13	2.0	18	2.8	39	6.0	0	0.0	582	89.3
Entamology	719	74	10.3	55	7.6	9	16.4	11	1.5	19	2.6	24	3.3	1	0.1	664	92.4
Toxicology	254	79	31.1	40	15.7	13	32.5	12	4.7	1	0.4	25	9.8	2	0.8	214	84.3
Botany	312	140	44.9	18	5.8	9	50.0	3	1.0	10	3.2	4	1.3	1	0.3	294	94.2
Plant Pathology	322	53	16.5	31	9.6	6	19.4	7	2.2	3	0.9	18	5.6	3	0.9	291	90.4
Plant Physiology	366	74	20.2	33	9.0	9	27.3	5	1.4	3	0.8	24	6.6	1	0.3	333	91.0
Plant Protection/Quar	1471	288	19.6	488	33.2	119	24.4	64	4.4	251	17.1	165	11.2	8	0.5	983	66.8
Horticulture	127	38	29.9	12	9.4	1	8.3	3	2.4	2	1.6	7	5.5	0	0.0	115	90.6
Genetics	358	70	19.6	32	8.9	7	21.9	3	0.8	5	1.4	23	6.4	1	0.3	326	91.1
Range Conservaton	1220	202	16.6	100	8.2	17	17.0	2	0.2	63	5.2	5	0.4	30	2.5	1120	91.8
Soil Conservation	4775	596	12.5	574	12.0	52	9.1	315	6.6	133	2.8	31	0.6	95	2.0	4201	88.0
Forestry	6314	1105	17.5	436	6.9	82	18.8	47	0.7	138	2.2	72	1.1	179	2.8	5878	93.1
Soil Science	1707	180	10.5	152	8.9	12	7.9	93	5.4	25	1.5	18	1.1	16	0.9	1555	91.1
Agronomy	329	12	3.6	26	7.9	1	3.8	7	2.1	12	3.6	5	1.5	2	0.6	303	92.1
Agricultural Mgmt	3938	575	14.6	428	10.9	70	16.4	249	6.3	119	3.0	21	0.5	39	1.0	3510	89.1
Gen Fish & Wildlife Ad.	212	18	8.5	12	5.7	4	33.3	8	3.8	3	1.4	1	0.5	0	0.0	200	94.3
Fishery Biology	1799	310	17.2	131	7.3	18	13.7	28	1.6	35	1.9	46	2.6	22	1.2	1668	92.7
Wildlife Refuge Mgmt	612	71	11.6	40	6.5	10	8.0	8	1.3	18	2.9	2	0.3	12	2.0	572	93.5
Wildlife Biology	2383	596	25.0	158	6.6	28	17.7	14	0.6	76	3.2	23	1.0	45	1.9	2225	93.4
Animal Science	128	21	16.4	10	7.8	0	0.0	4	3.1	3	2.3	2	1.6	1	0.8	118	92.2
Park Ranger	5869	1472	25.1	479	8.2	121	25.3	198	3.4	137	2.3	44	0.7	100	1.7	5390	91.8
Envt Protection Spec	3823	1606	42.0	537	14.0	289	53.8	298	7.8	104	2.7	101	2.6	34	0.9	3286	86.0
TOTALS	49171	11229	22.8	5362	10.9	1471	27.4	1919	3.9	1426	2.9	1327	2.7	690	1.4	43809	89.1

FIELD: Health Sciences

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 8-14

HEALTH SCIENCES PhDs BY SUBFIELD AND SEX, 1920 – 1991

	Total					Women					% Women							
	'86–'87	1988	1989	1990	1991	'86–'87	1988	1989	1990	1991	'20–72	'73–82	'83–85	'86–'87	1988	1989	1990	1991
HEALTH SCIENCES	**1578**	**867**	**985**	**960**	**1,049**	**956**	**543**	**638**	**595**	**670**	**11.7**	**29.0**	**56.9**	**60.6**	**62.6**	**64.8**	**62.0**	**63.9**
Audiology & Speech Pathology (1)	189	93	90	93	90	134	61	67	68	68	25.2	31.0	62.7	70.9	65.6	74.4	73.1	75.6
Environmental Health (3)	68	52	35	38	37	21	18	8	12	15		21.4	29.4	30.9	34.6	22.9	31.6	40.5
Dentistry (2)											4.2							
Public Health	199	122	126	122	133	115	74	84	76	77			59.0	57.8	60.7	68.7	62.3	57.9
Epidemiology	167	98	108	102	115	98	58	64	60	63			59.2	58.7	59.2	59.3	58.8	54.8
Public Health & Epidemiology (5)											16.5	40.7						
Nursing (3)	429	246	314	267	325	416	235	304	256	313		95.8	95.5	97.0	95.5	96.8	95.9	96.3
Pharmacy	242	95	111	116	113	56	28	37	38	39	5.5	12.3	26.0	23.1	29.5	33.3	32.8	34.5
Hospital Administration (4)											5.9	3.8						
Optometry, Ophthalmology (2)											5.7							
Pharmacology											10.0	20.3						
Medicine & Surgery (6)											5.5	0.0						
Rehab/Therapeutic Services (11)					17					10								58.8
Veterinary Medicine	72	48	49	70	56	18	17	13	24	12	1.2	10.9	25.4	25.0	35.4	26.5	34.3	21.4
Health Sciences, General (7)	47	23	23	33	29	16	11	11	8	12	13.5	20.6	29.8	34.0	47.8	47.8	24.2	41.4
Health Sciences, Other (7,8)	165	90	129	119	134	82	41	50	53	61	21.3	29.4	44.8	49.7	45.6	38.8	44.5	45.5

(1) Added in 1968 as "Speech & Hearing Sciences." Name changed to "Health Sciences: in 1983. (2) Dropped in 1961. Now included in "Health Sciences, Other." (3) Added in 1978. (4) Dropped in 1978. Now included in "Health Sciences, Other." (5) "Epidemiology" added in 1977. Two fields broken out in 1983. (6) Dropped as a separate field in 1977. (7) Added in 1962 as "Medical Sciences..." Name changed to "Health Sciences" in 1983. (8) Included "Psychiatry" which was dropped as a separate field in 1962.
(11) Added in 1991

FIELD: Medicine

SOURCE: Journal of the American Medical Association, Vol. 238, No. 26, 1977; Vol. 243, No. 9, 1980; Vol. 246, No. 25, 1981: Vol. 248 No. 24 1982; "Medical School Enrollments, 1973–74, 1973–74 thru 1977–78"; "Undergraduate Medical Education," Vol. 250, No. 12; Journal of Medical Education, Vol. 53, 1978; and personal communications with the Association of American Medical Colleges.

TABLE 8-15

APPLICANTS, FIRST YEAR, AND TOTAL ENROLLMENTS AND GRADUATES IN U.S. MEDICAL SCHOOLS BY SEX 1968 – 1991

	Applicants			First-Year Enrollment			Total Enrollment			Graduates		
Year	Total	Women	%W	Total	Women	%W	Total	Women	%W	Total	Women	%W
1968–69	21,118	2,097	9.9	9,863	887	9.0	35,833	3,165	8.8	8,049	607	7.5
1969–70	24,465	2,289	9.4	10,401	952	9.2	37,669	3,390	9.0	8,367	700	8.4
1970–71	24,987	2,734	10.9	11,348	1,256	11.1	40,487	3,894	9.6	8,974	827	9.2
1971–72	29,172	3,737	12.8	12,261	1,693	13.8	43,650	4,755	10.9	8,551	860	10.1
1972–73	36,135	5,480	15.2	13,726	2,315	16.9	47,546	6,099	12.8	10,391	924	8.9
1973–74	40,506	7,202	17.8	14,185	2,743	19.3	45,886	7,731	16.8	11,613	1,264	10.9
1974–75	42,624	8,712	20.4	14,963	3,260	21.8	54,074	9,786	18.1	12,714	1,706	13.4
1975–76	42,303	9,575	22.6	15,351	3,656	23.8	56,244	11,527	20.5	13,561	2,200	16.2
1976–77	42,135	10,244	24.3	15,667	3,876	24.7	58,266	13,059	22.4	13,607	2,611	19.2
1977–78	40,569	10,195	25.1	16,136	4,130	25.6	60,039	14,218	23.7	14,393	3,086	21.4
1978–79	36,636	9,561	26.1	16,630	4,184	25.2	62,213	15,293	24.6	14,966	3,445	23.0
1979–80	36,141	10,222	28.3	16,886	4,748	28.1	63,800	16,315	25.6	15,135	3,497	23.1
1980–81	36,100	10,644	29.5	17,204	4,970	28.9	65,497	17,375	26.5	15,667	3,892	24.8
1981–82	36,727	11,673	31.8	17,320	5,343	30.8	66,485	18,555	27.9	15,985	3,991	25.0
1982–83	35,730	11,685	32.7	17,254	5,445	31.6	66,749	19,627	29.3	15,802	4,193	26.7
1983–84	35,200	11,961	34.0	17,150	5,653	33.0	67,327	20,635	30.6	16,343	4,632	28.3
1984–85	35,944	12,476	34.7	16,997	5,715	33.6	67,016	21,316	31.8	16,318	4,904	30.1
1985–86	32,893	11,562	35.2	16,963	5,800	34.2	66,585	21,650	32.5	16,117	4,957	30.8
1986–87	31,323	11,267	36.0	16,819	5,894	35.0	66,125	22,100	33.4	15,830	5,107	32.3
1987–88	28,123	10,546	37.5	16,713	6,098	36.5	65,735	22,481	34.2	15,919	5,215	32.8
1988–89	26,721	10,180	38.1	16,868	6,254	37.3	65,300	22,855	35.0	15,630	5,221	33.4
1989–90	26,915	11,785	43.8	16,756	6,550	39.1	65,016	24,286	37.4	15,398	5,231	34.0
1990–91	29,243		0.0	16,876	6,733	39.9	65,163		0.0	15,427	5,553	36.0
1991–92	33,301		0.0	17,071	6,804	39.9	65,602		0.0			
							Total Graduates---			314,757	74,623	23.7

FIELD: Medicine

SOURCE: Minorities and Women in the Health Fields, Bureau of Health Resources Development, Public Health Service, May 1974: and Minority Students in Medical Education: Facts and Figures V, and "Facts," Association of American Medical Colleges Office of Minority Affairs, 1991

TABLE 8-16

FIRST YEAR AND TOTAL ENROLLMENT IN U.S. MEDICAL SCHOOLS BY MINORITY GROUP FOR SELECTED YEARS, 1971 – 1991

	FIRST YEAR			Black American				American Indian				Mexican American				Mainind Puerto Rican				Other Hispanic				Asian/Pacific Isl.				Total Minority			
YEAR	Total	Wom	%W	No.	%B	Wom	%W	No.	%AI	Wom	%W	No.	%M	Wom	%W	No.	%PR	Wom	%W	No.	%H	Wom	%W	No.	%PI	Wom	%W	No.	%M	Wom	%W
1971	12361	1693	13.7	882	7.1	200	22.7	23	0.2	8	34.8	118	1.0	10	8.5	40	0.3	6	15.0					217	1.8	42	19.4	1280	10.3	266	20.8
1974	14763	3260	22.1	1106	7.5			71	0.5			227	1.5			69	0.5							275	1.9			1748	11.8		
1975	15295	3647	23.8	1036	6.8	376	36.3	60	0.4	21	35.0	224	1.5	46	20.5	71	0.5	24	33.8	41	0.3	9	22.0	282	1.8	86	30.5	1714	11.2	562	32.8
1977	16136	4130	25.6	1085	6.7	443	40.8	51	0.3	15	29.4	246	1.5	66	26.8	68	0.4	23	33.8	157	1.0	43	27.4	395	2.4	115	29.1	2002	12.4	705	35.2
1978	16501	4173	25.3	1061	6.4	446	42.0	47	0.3	12	25.5	260	1.6	66	25.4	75	0.5	32	42.7					452	2.7			1895	11.4	556	29.3
1979	16930	4713	27.8	1108	6.5	495	44.7	63	0.4	16	25.4	290	1.7	74	25.5	86	0.5	30	34.9	188	1.1	59	31.4	502	3.0	154	30.7	2237	13.2	828	37.0
1980	17186	4996	29.1	1128	6.6	513	45.5	67	0.4	24	35.8	258	1.5	79	30.6	95	0.6	41	43.2	224	1.3			572	3.3			2344	13.6	657	28.0
1981	17268	5317	30.8	1196	6.9	517	43.2	70	0.4	19	27.1	300	1.7	91	30.3	105	0.6	46	43.8	247	1.4			765	4.4			2683	15.5	673	25.1
1982	17254	5462	31.7	1145	6.6	495	43.2	62	0.4	26	41.9	305	1.8	91	29.8	114	0.7	41	36.0	278	1.6			936	5.4			2840	16.4	653	23.0
1983	17150	5653	33.0	1173	6.8	544	46.4	75	0.4	38	50.7	301	1.8	102	33.9	109	0.6	44	40.4	248	1.4	76	30.6	983	5.7	337	34.3	2889	16.8	1141	39.5
1984	16997	5469	33.6	1148	6.8	563	49.0	77	0.5	27	35.1	329	1.9	93	28.3	118	0.7	48	40.7	243	1.4	82	35.8	1124	6.7	386	35.4	2760	16.8	1092	39.6
1985	16963	5520	34.2	1117	6.6	582	52.1	60	0.4	30	50.0	331	2.0	117	35.3	136	0.8	51	37.5	259	1.5	75	30.0	1295	7.7	420	33.7	2886	17.7	1157	40.1
1986	16819	5574	35.0	1174	7.0	600	51.1	61	0.4	25	41.0	331	2.0	121	36.6	111	0.7	45	40.5	276	1.6	94	35.1	1514	9.1	521	35.7	3159	19.6	1270	40.2
1987	16713	5767	36.5	1221	7.3	665	54.5	68	0.4	29	42.6	308	1.8	109	35.4	116	0.7	41	35.3	283	1.7	94	36.6	1827	11.2	656	36.9	3482	21.8	1464	42.0
1988	16868	5878	36.8	1210	6.2	668	55.3	76	0.4	42	51.5	295	1.6	120	42.3	127	0.7	59	45.3	288	1.7	94	35.6	2100	12.6	750	37.2	3709	23.2	1588	42.8
1989	16756	6025	36.0	1221	6.9	679	50.8	82	0.5	33	42.5	307	1.7	111	34.9	139	0.8	62	43.1	317	1.8	128	43.7	2257	13.5	818	38.2	4007	25.2	1684	42.0
1990	16876	6733	39.9	1263	7.5	699	55.3	76	0.5	31	40.8	285	1.7	112	39.3	120	0.7	52	43.3	312	1.8	114	36.5	2527	15.0	935	37.0	4583	27.1	1943	42.4
1991	17071	6804	39.9	1304	7.6	736	56.4	93	0.5	53	57.0	351	2.1	137	39.0	128	0.7	59	46.1	315	1.8	114	36.2	2744	16.1						
ALL YEARS																															
1971	43650	4755	10.9	2055	4.7	420	20.4	42	0.1	10	23.8	252	0.6	24	9.5	76	0.2	13	17.1					647	1.5	116	17.9	3072	7.03	583	19.0
1974	53554	9786	18.3	3355	6.3			157	0.3			638	1.2			172	0.3							959	1.8			5281	9.86		
1975	55818	11417	20.5	3456	6.2	1157	33.5	172	0.3	45	26.2	699	1.3	129	18.5	197	0.4	51	25.9	144	0.3	35	24.3	1022	1.8	256	25.0	5690	10.1	1673	29.4
1977	60039	14218	23.7	3587	6.0	1371	38.2	201	0.3	55	27.4	831	1.4	189	22.7	261	0.4	89	34.1	426	0.7	99	23.2	1422	2.4	417	29.3	6728	11.2	2220	33.0
1978	62213	15293	24.6	3537	5.7			202	0.3			882	1.4			277	0.4							1592	2.6			6490	10.4		
1979	63800	16141	25.3	3627	5.7	1549	42.7	212	0.3	55	25.9	964	1.5	229	23.8	283	0.4	104	36.7	567	0.9	160	28.2	1777	2.8	518	29.2	7430	11.6	2615	35.2
1980	65189	17373	26.7	3708	5.7			221	0.3			951	1.5			329	0.5			683	1.0			1924	3.0			7816	11.9		
1981	66298	18555	28.0	3884	5.9			229	0.3			1040	1.6			350	0.5			847	1.3			2518	3.8			8868	13.3		
1982	66748	19627	29.4	3869	5.8			235	0.4			1071	1.6			369	0.6			962	1.4			2936	4.4			9442	14.1		
1983	67327	20635	30.6	3892	5.8	1748	44.9	258	0.4	95	36.8	1082	1.6	352	32.5	366	0.5	143	38.9	983	1.5	285	29.0	3290	4.9	1101	33.5	9873	14.6	3724	37.7
1984	67016	21316	31.8	3944	5.9	1802	45.7	257	0.4	92	35.8	1126	1.7	359	31.9	380	0.6	154	40.5	987	1.5	291	29.5	3763	5.6	292	7.8	10457	15.6	2990	28.6
1985	66585	21350	32.1	3849	5.8	1796	46.7	235	0.4	95	40.4	1143	1.7	366	32.0	426	0.6	162	37.9	991	1.5	312	31.5	4269	6.4	316	7.4	10935	16.4	3047	27.9
1986	66125	22100	33.4	3892	5.9	1914	49.2	242	0.4	101	41.7	1153	1.7	394	34.2	435	0.7	162	37.2	1015	1.5	332	32.7	4883	7.4	326	6.7	11620	17.5	3229	27.8
1987	65735	22544	34.3	3968	6.0	2056	51.8	233	0.4	93	39.9	1144	1.7	379	33.1	467	0.7	175	37.5	1038	1.6	355	34.2	5738	8.7	332	5.8	12588	19.1	3390	26.9
1988	65300	22985	35.2	3995	6.1	2150	53.8	237	0.4	102	43.0	1128	1.7	408	36.2	436	0.7	172	39.3	1091	1.7	377	34.6	6595	10.1	340	5.2	13484	20.6	3549	26.3
1989	65016	23513	36.2	4145	6.4	2258	54.5	258	0.4	108	41.9	1087	1.7	396	36.4	452	0.7	189	41.8	1181	1.8	438	37.1	7489	11.5	311	4.2	14612	22.4	3700	25.3
1990	65163		0.0	4241	6.5	2367	55.8	277	0.4	118	42.6	1109	1.7	427	38.5	457	0.7	197	43.1	1176	1.8	454	38.6	8436	12.9	303	3.6	15696	24.0	3866	24.6
1991	65602		0.0	4334	6.6			301	0.5			1205	1.8			485	0.7			1137	1.7			9438	14.4			16900	25.7		

* Starting in 1984 data includes only new entrants. Prior years include repeating students.

FIELD: Medicine

SOURCE: Journal of the American Medical Association, v. 234, No. 13, 1975; v. 238, No. 26, 1977; v. 240, No. 26, 1978; Minority Students in Medical Education: Facts and Figures V. Association of American Medical College Office of Minority Affairs, 1991

TABLE 8-17

ENROLLED MEDICAL STUDENTS REPEATING CLASSES, SELECTED YEARS, FALL 1973 THRU 1990

1st–Year	Total Minority			Black Americans			American Indian			Mexican Amer.			Puerto Rican*			Other Hispanic			Asian/Pacific Is			All Other Students		
Fall Class	Total	Rep	%	Total	Rep	%	Total	Rep	%	Total	Rep	%	Total	Rep	%	Total	Rep	%	Total	Rep	%	Total	Rep	%
1973	1270	144	11.3	995	120	12.1	41	8	19.5	178	8	4.5	56	8	14.3							12642	142	1.1
1975	1419	192	13.5	1052	159	15.1	61	4	6.6	228	21	9.2	78	8	10.3							13808	157	1.1
1977	2220	188	8.5	1101	142	12.9	51	5	9.8	238	22	9.2	231	2	0.9	174	10	5.7	425	7	1.6	13914	225	1.6
1979	2602	225	8.6	1118	157	14.0	67	4	6.0	255	25	8.8	336	22	6.5	224	7	3.1	572	10	1.7	14601	287	2.0
1980	2566	276	10.8	1127	195	17.3	69	10	14.5	259	30	11.6	306	21	6.9	222	9	4.1	583	11	1.9	14638	288	2.0
1981	3096	286	9.2	1145	198	17.3	62	6	9.7	305	27	8.9	343	21	6.1	278	15	5.4	963	19	2.0	14185	324	2.3
1982	2903	269	9.3	1083	171	15.8	62	7	11.3	293	31	10.6	343	30	8.7	263	14	5.3	859	16	1.9	14327	297	2.1
1983	3275	287	8.8	1148	184	16.0	77	8	10.4	329	38	11.6	354	23	6.5	243	10	4.1	1124	24	2.1	13722	316	2.3
1984	2999	262	8.7	1045	166	15.9	79	6	7.6	303	36	11.9	352	19	5.4	233	11	4.7	987	24	2.4	13993	271	1.9
1985	3703	312	8.4	1174	194	16.5	61	8	13.1	331	39	11.8	347	15	4.3	276	9	3.3	1514	47	3.1	13716	383	2.8
1986	4043	280	6.9	1221	171	14.0	68	6	8.8	308	37	12.0	336	25	7.4	283	10	3.5	1827	31	1.7	12670	293	2.3
1987	4335	301	6.9	1210	191	15.8	76	5	6.6	295	27	9.2	366	18	4.9	288	22	7.6	2100	38	1.8	12533	383	3.1
1990	4783	303	6.3	1268	165	13.0	75	7	9.3	274	26	9.5	328	21	6.4	312	14	4.5	2526	70	2.8	12020	288	2.4
All Other Classes																								
1973	2478	128	5.2	1966	102	5.2	52	3	5.8	334	18	5.4	126	5	4.0							33477	202	0.6
1975	3176	181	5.7	2436	140	5.7	115	6	5.2	490	26	5.3	135	9	6.7							37306	262	0.7
1977	5246	235	4.5	2550	161	6.3	154	8	5.2	599	34	5.7	590	7	1.2	293	9	3.1	1060	16	1.5	39076	286	0.7
1979	5800	211	3.6	2546	128	5.0	135	13	9.6	675	29	4.3	708	15	2.1	413	4	1.0	1323	22	1.7	41381	291	0.7
1980	6003	221	3.7	2592	149	5.7	157	7	4.5	698	24	3.4	744	15	2.0	442	6	1.4	1370	20	1.5	42290	313	0.7
1981	6495	233	3.6	2620	159	6.1	161	5	3.1	713	23	3.2	840	19	2.3	573	9	1.6	1588	18	1.1	42670	295	0.7
1982	6951	270	3.9	2646	153	5.8	171	5	2.9	741	34	4.6	930	33	3.5	650	14	2.2	1813	31	1.7	42705	263	0.6
1983	7224	246	3.4	2583	144	5.6	182	8	4.4	753	39	5.2	956	17	1.8	683	12	1.8	2067	26	1.3	43044	328	0.8
1984	7553	252	3.3	2618	148	5.7	175	14	8.0	750	12	1.6	946	32	3.4	705	10	1.4	2359	36	1.5	42545	306	0.7
1985	7756	294	3.8	2526	165	6.5	169	11	6.5	739	31	4.2	937	31	3.3	715	17	2.4	2670	39	1.5	41919	288	0.7
1986	8798	281	3.2	2695	164	6.1	185	6	3.2	799	30	3.8	1003	13	1.3	748	15	2.0	3368	53	1.6	40565	329	0.8
1987	9628	305	3.2	2832	151	5.3	168	4	2.4	833	34	4.1	1031	22	2.1	766	21	2.7	3998	73	1.8	39428	355	0.9
1990	11745	248	2.1	2947	116	3.9	197	6	3.0	834	20	2.4	909	17	1.9	859	11	1.3	5999	78	1.3	36438	236	0.6

* Mainland only before 1977, then Mainland and Commonwealth

FIELD: Medicine

SOURCE: Women in Engineering, Medicine and Science, by Vera Kistlakowsky, TheConference on Women in Science and Engineering, National Research Council, June 11–12, 1973; and Journal of the American Medical Association, Vol. 234, No. 13, December 1975; Vol. 243, No. 9, March 1980; and Vol. 246, No. 25, December 1981; copyright by AMA; and Office of Minority Affairs, Association of American Medical Colleges, 1985 and 1991

TABLE 8-18

ENROLLMENTS AND GRADUATES IN U.S. MEDICAL SCHOOLS BY SEX SELECTED YEARS, 1914 – 1989

Year	No. of Schools	Enroll-ment	Women Students		M.D. Grads.	Women Graduates	
			No.	%		No.	%
1914–15	96	14,891	583	3.9	3,536	92	2.6
1924–25	80	18,200	910	5.0	3,974	204	5.1
1934–45	77	22,888	1,077	4.7	5,101	207	4.1
1954–55	81	28,583	1,537	5.4	6,977	345	4.9
1964–65	88	32,428	2,503	7.7	7,409	503	6.8
1974–75	114	53,554	9,661	18.0	12,714	1,706	13.4
1979–80	126	63,800	16,315	25.6	15,135	3,497	23.1
1984–85	127	67,016	21,316	31.8	16,318	4,904	30.1
1989–90	127	65,163	24,286	37.3	15,398	5,231	34.0

FIELD: Medicine

SOURCE: Minorities and Women in the Health Fields, Bureau of Health Resources Development, Public Health Service, May 1984; and Minority Students in Medical Education FActs and Figures V, Association of American Medical Colleges Office of Minority Affairs, 1989 and 'Facts', AAMCOMA, 1991

TABLE 8-19

M.D. DEGREES AWARDED TO U.S. WOMEN, BY MINORITY STATUS, 1980 – 1991

YEAR	Number of Degrees	Black		Indian		Mexican		Puerto Rican		Minority*		Asian	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1980	3,526	308	8.7	7	0.2	40	1.1	31	0.9	386	10.9		
1981	3,902	343	8.8	12	0.3	51	1.3	20	0.5	426	10.9		
1982	4,007	348	8.7	12	0.3	59	1.5	31	0.8	450	11.2		
1983	4,232	388	9.2	12	0.3	53	1.3	25	0.6	478	11.3		
1984	4,632	378	8.2	20	0.4	59	1.3	32	0.7	489	10.6	217	4.7
1985	4,904	372	7.6	18	0.4	77	1.6	38	0.8	505	10.3	238	4.9
1986	4,957	350	7.1	15	0.3	72	1.5	37	0.7	474	9.6	296	6.0
1987	5,107	362	7.1	30	0.6	79	1.5	28	0.5	499	9.8	324	6.3
1988	5,215	409	7.8	20	0.4	67	1.3	43	0.8	539	10.3	393	7.5
1989	5,221	425	8.1	25	0.5	83	1.6	46	0.9	579	11.1	436	8.4
1990	5,321	453	8.5	19	0.4	83	1.6	37	0.7	592	11.1	514	9.7
1991	5,553	516	9.3	15	0.3	99	1.8	33	0.6	663	11.9	623	11.2
TOTAL	56,577	4,652	8.2	205	0.4	822	1.5	401	0.7	6,080	10.7	3,041	21.0

* Excludes Asians.

FIELD: Medicine

SOURCE: Journal of the American Medical Association, Vol. 234, No. 13, 1975; Vol. 238, No. 26, 1977; Vol. 240, No. 26, 1978; Vol. 243 No. 9 1980; Vol. 246, No. 25, 1981; Vol. 248, No. 24, 1982; Vol. 250, No. 12, 1983, Copyright by A.M.A. Fact sheets dated 2–28–85 and 10–18–85, and Minority Students in Medical Education: FActs and Figures V, Association of American Medical Colleges and personnal communications with AMC.

TABLE 8-20
MINORITY GRADUATES IN MEDICINE BY SEX, SELECTED YEARS, 1970 THRU 1991

	Total			Black				Am. Indian/Alaskan Nat				Mexican American				Puerto Rican				Asian/Pacific Isl.			
Year	No.	Women	%W	No.	%B	Wom	%W	No.	%I	Wom	%W	No.	%M	Wom	%W	No.	%PR	Wom	%W	No.	%A	Wom	%W
1970	8,367			165	2.0			4	0.0			10	0.1			9	0.1						
1973	10,391			341	3.3			8	0.1			39	0.4			10	0.1						
1975	12,714			638	5.0			22	0.2			110	0.9			28	0.2						
1977	13,607			752	5.5			29	0.2			144	1.1			38	0.3						
1978	14,393			793	5.5			47	0.3			172	1.2			176	1.2			319	2.2		
1979	14,966			774	5.2			49	0.3			194	1.3			190	1.3			350	2.3		
1981	15,667			773	4.9			42	0.3			201	1.3			223	1.4			414	2.6		
1982	15,985			763	4.8			45	0.3			225	1.4			222	1.4			459	2.9		
1983	15,802			883	5.6			45	0.3			228	1.4			289	1.8			493	3.1		
1984	16,343	4,632	28.3	818	5.0	378	46.2	59	0.4	20	33.9	220	1.3	59	26.8	302	1.8	100	33.1	679	4.2	217	32.0
1985	16,318	4,904	30.1	837	5.1	378	45.2	65	0.4	18	27.7	242	1.5	77	31.8	318	1.9	97	30.5	750	4.6	238	31.7
1986	16,118	4,957	30.8	824	5.1	350	42.5	49	0.3	15	30.6	233	1.4	72	30.9	89	0.6	37	41.6	909	5.6	295	32.5
1987	15,830	5,107	32.3	920	5.8	362	39.3	63	0.4	30	47.6	226	1.4	79	35.0	81	0.5	28	34.6	947	6.0	324	34.2
1988	15,919	5,215	32.8	850	5.3	409	48.1	58	0.4	20	34.5	241	1.5	67	27.8	112	0.7	43	38.4	1119	7.0	393	35.1
1989	15,630	5,221	33.4	821	5.3	425	51.8	57	0.4	25	43.9	245	1.6	83	33.9	124	0.8	46	37.1	1241	7.9	426	34.3
1990	15,398	5,231	34.0	874	5.7	453	51.8	52	0.3	19	36.5	249	1.6	83	33.3	93	0.6	37	39.8	1433	9.3	514	35.9
1991	15,427	5,553	36.0	918	6.0	516	56.2	46	0.3	15	32.6	261	1.7	99	37.9	101	0.7	33	32.7	1687	10.9	623	36.9
Totals	248,875	40,820	32.1	12,744	5.1	3,271	47.7	740	0.3	162	36.1	3,240	1.3	619	32.3	2,405	1.0	421	34.5	10,800	4.3	3,030	34.6

SOURCE: Minorities and Women in the Health Fields, Bureau of Health Resources Development, Public Health Service, May 1974; and Minority Students in Medical Education: Facts and Figures V, Association of American Medical Colleges Office of Minority Affairs, 1991

TABLE 8-21
U.S. MEDICAL SCHOOL FACULTY BY SEX AND ETHNIC ORIGIN, SELECTED YEARS, 1975 –1991

	Total*			Black				Indian				Mexican American				Puerto Rican				Other Hispanic				Asian				White			
Year	No.	Wom	%W	No.	%B	Wom	%W	No.	%I	W	%W	No.	%M	Wom	%W	No.	%P	Wom	%W	No.	%H	Wom	%W	No.	%A	Wom	%W	No.	%W	Wom	%W
1975	40578	6119	15.1	733	1.8	197	26.9	14	0.0	2	14.3	74	0.2	10	13.5	275	0.7	65	23.6	566	1.4	67	11.8	2383	5.9	443	18.6	33309	82.1	4883	14.7
1976	47140	7153	15.2	820	1.7	201	24.5	22	0.0	2	9.1	89	0.2	13	14.6	320	0.7	75	23.4	621	1.3	77	12.4	2824	6.0	560	19.8	38841	82.0	5681	14.7
1981	47701	7822	16.4	810	1.7	246	30.4	37	0.1	7	18.9	105	0.2	17	16.2	311	0.7	93	29.9	686	1.4	105	15.3	3319	7.0	755	22.7	39232	82.2	6109	15.6
1985	52464	9285	17.7	950	1.8	307	32.3	47	0.1	9	19.1	124	0.2	15	12.1	323	0.6	100	31.0	788	1.5	137	17.4	3783	7.2	883	23.3	43564	83.0	7274	16.7
1986	57803	10583	18.3	1040	1.8	344	33.1	47	0.1	10	21.3	129	0.2	17	13.2	443	0.8	123	27.8	833	1.4	147	17.6	4061	7.0	951	23.4	46763	80.9	8142	17.4
1988	60181	11673	19.4	1103	1.8	373	33.8	52	0.1	10	19.2	152	0.3	25	16.4	396	0.7	110	27.8	914	1.5	173	18.9	4437	7.4	1062	24.4	49441	82.2	9112	18.4
1991	65843	14171	21.5	1374	2.1	487	35.4	64	0.1	17	26.6	183	0.3	44	24.0	461	0.7	153	33.2	1029	1.6	206	20.0	4018	6.1	1299	32.3	53511	81.3	10951	20.5

* Includes those whose race or ethnic origin is unknown.

FIELD: Dentistry

SOURCE: Women's Participation in First–Professional Degree Programs in Medicine, Dentistry, Veterinary Medicine and Law, 1969–70 through 1974–75, NCES 76–023; Annual Report on Dental Education Series 1975–176 – 1987–88 and personal communication 3/92, American Dental Association

TABLE 8-22

APPLICANTS, ENROLLMENTS, GRADUATES, U.S. DENTAL SCHOOLS, BY SEX, 1969–69 THRU 1989–90

Year	Applicants			1st Year Enrollment			Total Enrollment			Graduates		
	Total	Women	%W	Total	Women	%W	Total	Women	%W	Total	Women	%W
1968–69				4,203	46	1.1	15,406	167	1.1	3,457	36	1.0
1969–70	10,325	120	1.2	4,354	69	1.6	16,136	227	1.4	3,748	36	1.0
1970–71	10,410	160	1.5	4,639	103	2.2	16,510	274	1.7	3,777	46	1.2
1971–72	11,102	302	2.7	5,103	160	3.1	17,433	355	2.0	3,894	46	1.2
1972–73	13,476	506	3.8	5,337	224	4.2	18,376	511	2.8	3,961	40	1.0
1973–74	14,820	727	4.9	6,123	423	6.9	19,215	892	4.6	4,478	88	2.0
1974–75	14,850	1,193	8.0	5,828	638	10.9	20,163	1,403	7.0	4,513	92	2.0
1975–76	15,734	*		5,763	707	12.3	20,767	1,861	9.0	4,969	156	3.1
1976–77	14,807	*		5,935	802	13.5	21,013	2,349	11.2	5,336	248	4.6
1977–78	12,835	*		5,954	880	14.8	21,510	2,796	13.0	5,177	369	7.1
1978–79	11,753	*		6,301	1,000	15.9	22,176	3,112	14.0	5,324	634	11.9
1979–80	10,520	*		6,132	1,076	17.5	22,482	3,482	15.5	5,424	634	11.7
1980–81	9,601	1,960	20.4	6,030	1,194	19.8	22,842	3,879	17.0	5,256	715	13.6
1981–82	8,852	1,861	21.0	5,955	1,268	21.3	22,621	4,227	18.7	5,550	825	14.9
1982–83	7,724	1,722	22.3	5,496	1,223	22.2	22,235	4,457	20.0	5,371	838	15.6
1983–84	7,124	1,779	25.0	5,371	1,313	24.4	21,428	4,733	22.1	5,274	1,089	20.6
1984–85	6,490	*		5,047	1,369	27.1	20,588	4,899	23.8	5,371	1,063	19.8
1985–86	6,216	*		4,843	1,324	27.3	19,563	4,944	25.3	4,958	1,094	22.1
1986–87	5,724	1,790	31.3	4,554	1,387	30.5	18,673	5,068	27.1	4,744	1,144	24.1
1987–88	5,398	*		4,370	1,410	32.3	17,885	5,253	29.4	4,581	1,263	27.6
1988–89	5,019	*		4,169	1,395	33.5	17,094	5,265	30.8	4,247	1,108	26.1
1989–90										3,995	1,299	32.5
							Total Graduates ---			103,405	12,863	12.4

* Not available

TABLE 8-23

FIRST–YEAR ENROLLMENT IN U.S. DENTAL SCHOOLS BY MINORITY GROUP FOR SELECTED YEARS, 1972 – 1988

Year	Total	Black			Indian			Hispanic			Asian			All Minority		
		Total	%B	Wom	Total	%I	Wom	Total	%H	Wom	Total	%A	Wom	Total	%M	Wom
1972	5,287	266	5.0		5	0.1		56	1.1		138	2.6		465	8.8	
1977	5,954	296	5.0		10	0.2		110	1.8		225	3.8		641	10.8	
1978	6,235	280	4.5		16	0.3		122	2.0		263	4.2		681	10.9	
1979	6,066	274	4.5		19	0.3		163	2.7		289	4.8		745	12.3	
1980	6,030	283	4.7		12	0.2		160	2.7		317	5.3		772	12.8	
1981	5,855	299	5.1		21	0.4		183	3.1		373	6.4		876	15.0	
1982	5,498	289	5.3		16	0.3		187	3.4		387	7.0		879	16.0	
1983	5,274	276	5.2		19	0.4		172	3.3		406	7.7		873	16.6	
1984	5,047	299	5.9	135	17	0.3	4	264	5.2	106	465	9.2	154	1,045	20.7	399
1985	4,843	281	5.8	129	16	0.3	6	312	6.4	122	496	10.2	182	1,105	22.8	439
1986	4,554	286	6.3	135	9	0.2	4	316	6.9	128	499	11.0	194	1,110	24.4	461
1987	4,370	280	6.5	140	20	0.5	9	358	8.3	143	636	14.7	246	1,294	30.0	538
1988	4,196	288	6.9	138	21	0.5	5	316	7.5	122	681	16.2	269	1,306	31.1	534
1990	3,995	204	5.1		12	0.3		348	8.7		577	14.4		1,141	28.6	534

FIELD: Dentistry

SOURCE: Supplement 5, Annual Report 88/89, Dental Education, American Dental Association and personal communication 3/92

TABLE 8-24

DENTAL SCHOOL FACULTY BY WORK TYPE, MINORITY GROUP AND SEX 1986–87, 1988–89 AND 1990–91

	1986–87						1988–89						1990–91
	Total		Clinical		Science		Total		Clinical		Science		
Faculty	No.	%T	No.	%C	No.	%S	No.	%T	No.	%C	No.	%S	
Total	6053		4611	76.2	1442	23.8	5805		4509	77.7	1296	22.3	11015
Women	1520	25.1	1135	24.6	385	26.7	1541	26.5	1248	27.7	293	22.6	2183
Black	410	6.8	329	7.1	81	5.6	389	6.7	325	7.2	64	4.9	394
Men	320	5.3	257	5.6	63	4.4	295	5.1	245	5.4	50	3.9	
Women	90	1.5	72	1.6	18	1.2	94	1.6	80	1.8	14	1.1	
Hispanic	258	4.3	221	4.8	37	2.6	264	4.5	233	5.2	31	2.4	295
Men	204	3.4	176	3.8	28	1.9	203	3.5	180	4.0	23	1.8	
Women	54	0.9	45	1.0	9	0.6	61	1.1	53	1.2	8	0.6	
Indian	28	0.5	21	0.5	7	0.5	32	0.6	22	0.5	10	0.8	38
Men	25	0.4	19	0.4	6	0.4	27	0.5	19	0.4	8	0.6	
Women	3	0.0	2	0.0	1	0.1	5	0.1	3	0.1	2	0.2	
Asian	498	8.2	360	7.8	138	9.6	526	9.1	403	8.9	123	9.5	594
Men	409	6.8	285	6.2	124	8.6	429	7.4	321	7.1	108	8.3	
Women	89	1.5	75	1.6	14	1.0	97	1.7	82	1.8	15	1.2	

FIELD: Pharmacy

SOURCE: Earned Degrees Conferred Series, 1969–90, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 8-25

PHARMACY DEGREES AWARDED BY SEX AND LEVEL OF DEGREE 1968–69 THRU 1989–90

	Bachelors			Masters			Doctorates			First Professionals		
YEAR	Total	Wom	%Wom	Total	Wom	%Wom	Total	Wom	%Wom	Total	Wom	%W
1968–69	4,172	692	16.6	232	33	14.2	74	4	5.4			
1969–70	4,543	853	18.8	229	38	16.6	79	11	13.9			
1970–71	4,593	951	20.7	194	40	20.6	94	1	1.1			
1971–72	4,668	1,088	23.3	221	49	22.2	101	8	7.9			
1972–73	5,070	1,277	25.2	167	36	21.6	296	75	25.3			
1973–74	5,773	1,560	27.0	240	44	18.3	132	16	12.1			
1974–75	6,487	1,821	28.1	285	75	26.3	206	46	22.3			
1975–76	7,018	2,137	30.5	307	60	19.5	82	8	9.8			
1976–77	7,495	2,434	32.5	274	72	26.3	75	10	13.3	527	145	27.5
1977–78	7,468	2,712	36.3	320	91	28.4	96	13	13.5			
1978–79	6,919	2,759	39.9	330	89	27.0	104	23	22.1	639	230	36.0
1979–80	7,122	2,919	41.0	380	117	30.8	89	16	18.0	637	239	37.5
1980–81	6,640	2,910	43.8	336	120	35.7	108	17	15.7	664	283	42.6
1981–82	6,367	2,930	46.0	368	135	36.7	127	21	16.5	625	260	41.6
1982–83	5,708	2,795	49.0	331	123	37.2	111	25	22.5	705	329	46.7
1983–84	5,480	2,706	49.4	333	118	35.4	153	48	31.4	709	377	53.2
1984–85	5,011	2,668	53.2	282	107	37.9	147	47	32.0	861	431	50.1
1985–86	5,130	2,766	53.9	277	103	37.2	185	49	26.5	903	471	52.2
1986–87	5,022	2,809	55.9	265	116	43.8	199	58	29.1	861	510	59.2
1987–88	5,277	3,024	57.3	244	102	41.8	174	60	34.5	951	569	59.8
1988–89	5,486	3,248	59.2	251	107	42.6	178	64	36.0	1074	652	60.7
1989–90	5,995	3,577	59.7	287	137	47.7	167	59	35.3	1191	709	59.5
TOTALS	127,444	50,636	39.7	6,153	1,912	31.1	2,977	679	22.8	10,347	5,205	50.3

FIELD: Pharmacy

SOURCE: Degrees Conferred by Schools and Colleges of Pharmacy 1988-89, American Association of Colleges of Pha

TABLE 8-26

PHARMACY DEGREES CONFERRED BY LEVEL OF DEGREE, ETHNIC GROUP AND SEX
1977 – 1989

YEA	White American			Black American			Hispanic American			Asian American			American Indian			Foreign			Total(1)			
	M	F	%W	M	F	%B	M	F	%H	M	F	%A	M	F	%I	M	F	%F	M	F	Total	%F
Bachelor of Science and First Professional Degrees																						
1977	4851	2188	86	107	119	3	139	176	4	142	103	3	6	3	0.1	260	98	4	5510	2690	8200	33
1978	4522	2395	87	125	112	3	128	173	4	140	118	3	5	1	0.1	156	77	3	5093	2889	7982	36
1979	4158	2516	86	116	159	4	100	189	4	147	122	3	13	2	0.2	134	70	3	4677	3069	7746	40
1980	3985	2511	85	113	140	3	97	182	4	164	131	4	7	1	0.1	148	84	3	4541	3071	7612	40
1981	3603	2773	85	90	147	3	135	235	5	140	153	4	1	4	0.1	153	91	3	4127	3406	7533	45
1982	3233	2749	85	96	160	4	88	156	3	167	159	5	8	6	0.2	149	77	3	3753	3313	7066	47
1983	2810	2596	81	90	174	4	97	171	4	148	177	5	5	3	0.1	164	117	4	3370	3275	6645	49
1984	2469	2475	79	102	150	4	138	84	4	152	195	6	6	4	0.2	211	130	5	3183	3111	6294	49
1985	2228	2537	80	113	150	4	99	148	4	121	206	5	3	4	0.1	195	141	6	2764	3195	5959	54
1986	2162	2526	78	122	199	5	91	132	4	137	202	6	7	4	0.2	226	202	7	2745	3265	6010	54
1987	2084	2645	78	102	131	4	100	165	4	125	152	5	4	4	0.1	189	176	6	2612	3454	6066	57
1988	2149	2918	80	95	192	5	84	165	4	119	219	5	6	6	0.2	178	185	6	2641	3702	6343	58
1989	2122	3089	77	97	221	5	87	165	4	160	308	7	6	6	0.2	210	220	6	2725	4056	6781	60
Master of Science Degrees																						
1977	227	64	73	3	2	1		1	0	14	4	5				62	19	20	309	90	399	23
1978	225	68	69	7	3	2		3	1	16	9	6				54	33	21	305	117	422	28
1979	228	81	71	7	3	2	2	1	1	17	9	6				42	40	19	301	134	435	31
1980	224	75	64	5	5	2	1	2	1	11	16	6				50	35	18	315	150	465	32
1981	192	113	70	8	9	4		2	0	6	8	3				64	31	22	271	163	434	38
1982	189	93	62	2	3	1	2	4	1	2	4	1	1		0.2	87	44	29	293	165	458	36
1983	183	99	66	1	1	0	1	3	1	6	4	2				58	30	21	277	149	426	35
1984	168	86	64	3	5	2	1	3	1	12	4	4				53	38	23	253	141	394	36
1985	134	81	64	2	8	3	2	1	1	8	3	3				63	35	29	210	128	338	38
1986	166	116	68	6		1	3	5	2	5	2	2	1		0.2	64	47	27	245	170	415	41
1987	136	95	66	2	4	2	2	2	1	3	8	3				43	39	24	197	151	348	43
1988	125	102	64	8	4	3	2	2	1	6	3	3		2		52	45	27	194	159	353	45
1989	131	103		6	2		1	6		14	2					73	51		226	165	391	
PhD Degrees																						
1977	91	8	60	2		1	1		1	5		3		1	0.6	48	10	35	147	19	166	11
1978	106	10	65	1		1		1	1	P	1	5				40	8	27	158	20	178	11
1979	85	13	64	1		1				4	2	4				33	13	30	125	28	153	18
1980	96	16	59	3		2	1		1	10	2	6				43	15	31	155	34	189	18
1981	112	21	74	1		1	1		1	6	2	4				32	5	21	152	28	180	16
1982	105	21	69	1		1	1		1	2	1	2				36	14	27	146	36	182	20
1983	104	28	63				1		0	6	3	4				40	22	30	154	54	208	26
1984	105	30	59	2		1	5	2	3	11	2	6				45	19	28	174	53	227	23
1985	106	34	60	2		1	1	1	1	6	4	4	1		0.4	59	18	33	175	57	232	25
1986	112	48	62	2		1	1		0	4	2	2				73	18	35	192	68	260	26
1987	119	43	57	2		1	4		1	7	6	5				64	30	33	203	80	283	28
1988	97	48	55	1	1	1	3		1	4	2	2				82	23	40	188	75	263	29
1989	104	54	53	1	3	1	2	2	1	6	4	3				68	50	39	184	116	300	39

(1) Includes other American minorities.

Source: American Association of Colleges of Pharmacy

TABLE 8-27

PHARMACY FACULTY, 1991–92

	Total	Men	Women	%Wom
Tenured	1,356	1,216	140	10.3
Tenure Track	754	491	263	34.9
Non–Tenure Track	608	333	275	45.2
Total	2,718	2,040	678	24.9

TABLE 8-28

FULL–TIME PHARMACY FACULTY BY RANK AND SEX, 1991–92

Faculty Rank	Total	Men	Women	%Wom
Dean	67	67	0	0.0
Asst/Assoc Dean	146	128	18	12.3
Professor	701	666	35	5.0
Assoc Professor	738	594	144	19.5
Assist Professor	961	542	419	43.6
Instructor	94	48	46	48.9
Lecturer	19	10	9	47.4
Librarian	9	0	9	100.0
Total	2,735	2,055	680	24.9

TABLE 8-29

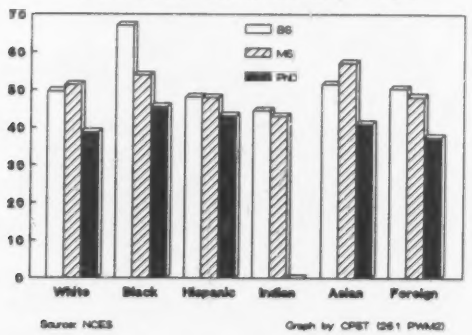
FULL-TIME PHARMACY FACULTY BY RANK, SEX AND RACE/ETHNICITY 1991-92

Faculty Rank	White[a]		Black[a]		Hispanic[a]		Asian/PI[a]		American Indian[a]		Other[a]		Foreign[b]		TOTAL	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Dean	57	0	5	0	0	0	2	0	0	0	0	0	0	0	64	0
Asst/Assoc Dean	110	10	6	2	2	1	4	1	2	0	0	0	1	0	125	14
Professor	558	27	15	3	9	1	51	3	2	0	0	0	12	0	647	34
Associate Professor	490	115	21	7	6	8	40	6	2	0	0	0	16	1	575	137
Assistant Professor	407	311	28	30	13	18	42	31	2	0	3	0	27	8	522	398
Instructor	43	30	1	3	1	4	0	1	0	0	0	0	0	2	45	40
Lecturer	9	5	0	0	1	4	0	0	0	0	0	0	0	0	10	9
Librarian	0	8	0	1	0	0	0	0	0	0	0	0	0	0	0	9
TOTAL	1674	506	76	46	32	36	139	42	8	0	3	0	56	11	1988	641

[a] U.S. citizen or permanent resident
[b] non-permanent resident

CHART 8-1

PERCENT WOMEN AMONG LIFE SCIENCES GRADUATES, 1990



FIELD: Optometry

SOURCE: Minorities and Women in the Health Fields, Bureau of Health Resources Development, 1987; personal communications from the Association of Schools and Colleges of Optometry and surveys conducted by the Council on Optometric Education of the American Optometric Association.

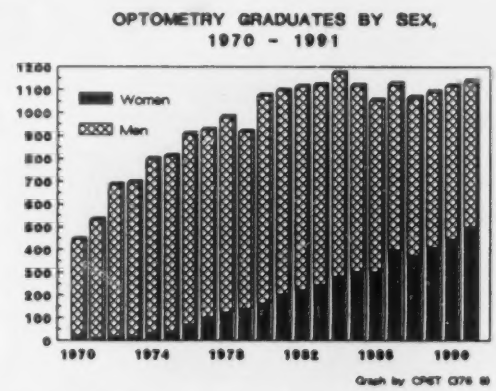
TABLE 8-30

TOTAL ENROLLMENTS AND GRADUATES IN OPTOMETRY BY SEX
1969–70 thru 1990–91

	NUMBER OF STUDENTS					GRADUATES*		
YEAR	Total	Men	%Men	Women	%Wom	Total	Women	%Wom
1969–70	2,488	2,415	97.1	73	2.9	444	23	5.2
1970–71	2,831	2,749	97.1	82	2.9	530	12	2.3
1971–72	3,097	2,985	96.4	112	3.6	684	18	2.6
1972–73	3,328	3,158	94.9	170	5.1	692	17	2.5
1973–74	3,529	3,268	92.6	261	7.4	793	34	4.3
1974–75	3,679	3,328	90.5	351	9.5	809	39	4.8
1975–76	3,888	3,432	88.3	456	11.7	906	72	7.9
1976–77	4,023	3,491	86.8	532	13.2	923	103	11.2
1977–78	4,440	3,741	84.3	699	15.7	978	126	12.9
1978–79	4,436	3,679	82.9	757	17.1	916	140	15.3
1979–80	4,500	3,632	80.7	868	19.3	1,073	166	15.5
1980–81	4,540	3,555	78.3	985	21.7	1,096	204	18.6
1981–82	4,541	3,464	76.3	1,077	23.7	1,113	224	20.1
1982–83	4,561	3,388	74.3	1,173	25.7	1,120	246	22.0
1983–84	4,539	3,248	71.6	1,291	28.4	1,171	285	24.3
1984–85	4,460	3,069	68.8	1,391	31.2	1,117	306	27.4
1985–86	4,210	2,759	65.5	1,451	34.5	1,053	304	28.9
1986–87	4,494	2,810	62.5	1,684	37.5	1,124	399	35.5
1987–88	4,495	2,723	60.6	1,772	39.4	1,065	375	35.2
1988–89	4,708	2,731	58.0	1,977	42.0	1,090	412	37.8
1989–90	4,683	2,572	54.9	2,111	45.1	1,115	450	40.4
1990–91	4,701	2,462	52.4	2,239	47.6	1,136	500	44.0
TOTALS	90,171	68,659	76.1	21,512	23.9	20,948	4,455	21.3

* From 1973–74 thru 1987–88, the data are full–time fourth year student enrollments.
In 1988–89 the data are actual graduates. Starting in 1985–86 the data includes U.S. Territories.

CHART 8-2



FIELD: Optometry

SOURCE: Minorities and Women in the Health Fields, Bureau of Health Resources Development, 1987 and personal communications from the Association of Schools and Colleges of Optometry and surveys conducted by the Council on Optometric Education of the American Optometric Association.

TABLE 8-31

ENROLLMENTS IN U.S. SCHOOLS OF OPTOMETRY BY SEX AND RACE/ETHNICITY, FALL 1973 thru FALL 1990

Fall	Total			Black American				Hispanic American				American Indian				Asian Americans				White Americans			
Year	No.	Women	%W	No.	%	Wom	%W	No.	%	Wom	%W	No	%	Wom	%W	No.	%	Wom	%W	No.	%	Wom	%W
1973	3,529			52	1.5			39	1.1			5	0.1			141	4.0			3292	93.3		
1974	3,679			73	2.0			45	1.2			8	0.2			153	4.2			3400	92.4		
1975	3,888			83	2.1			55	1.4			5	0.1			166	4.3			3579	92.1		
1976	4,033			89	2.2			46	1.1			6	0.1			157	3.9			3735	92.6		
1977	4,440			79	1.8			55	1.2			7	0.2			153	3.4			4146	93.4		
1978	4,436			62	1.4			66	1.5			11	0.2			166	3.7			4131	93.1		
1979	4,500			56	1.2			67	1.5			13	0.3			208	4.6			4156	92.4		
1980	4,540			57	1.3			80	1.8			12	0.3			243	5.4			4148	91.4		
1981	4,541	1,077	23.7	57	1.3	28	49.1	98	2.2	26	26.5	9	0.2	3	33.3	283	6.2	102	36.0	4094	90.2	918	22.4
1982	4,561	1,173	25.7	76	1.7	38	50.0	107	2.3	33	30.8	19	0.4	6	31.6	296	6.5	115	38.9	4063	89.1	981	24.1
1984	4,460	1,340	30.0	96	2.2	50	52.1	116	2.6	40	34.5	21	0.5	6	28.6	269	6.0	150	55.8	3958	88.7	1110	28.0
1985	4,445	1,510	34.0	111	2.5	65	58.6	125	2.8	45	36.0	20	0.4	5	25.0	312	7.0	165	52.9	3877	87.2	1240	32.0
1986	4,494	1,684	37.5	116	2.6	74	63.8	136	3.0	56	41.2	13	0.3	5	38.5	352	7.8	188	53.4	3877	86.3	1361	35.1
1987	4,509	1,772	39.3	117	2.6	68	58.1	139	3.1	65	46.8	22	0.5	10	45.5	410	9.1	221	53.9	3821	84.7	1408	36.8
1988	4,708	1,977	42.0	130	2.8	84	64.6	280	5.9	150	53.6	26	0.6	8	30.8	462	9.8	259	56.1	3810	80.9	1476	38.7
1989	4,683	2,111	45.1	132	2.8	94	71.2	293	6.3	157	53.6	16	0.3	6	37.5	529	11.3	333	62.9	3650	77.9	1495	41.0
1990	4,701	2,239	47.6	135	2.9	96	71.1	295	6.3	169	57.3	21	0.4	11	52.4	594	12.6	386	65.0	3575	76.0	1547	43.3
TOTAL	74,147	14,883	36.2	1,521	2.1	597	61.5	2,042	2.8	741	46.6	234	0.3	60	35.9	4,894	6.6	1,919	54.7	65,312	88.1	11,536	33.2

Note: 1984–85 & 1985–86 data for women are interpolated.

FIELD: Osteopathy

SOURCE: Minorities and Women in the Health fields, Bureau of Health Resources Development, Public Health Serivce, May 1974; Anual Report 1981 through 1989, American Association of Colleges of Osteopathic Medicine; and personal communications.

TABLE 8-32

APPLICANTS, FIRST YEAR & TOTAL ENROLLMENTS AND GRADUATES IN U.S. SCHOOLS OF OSTEOPATHIC MEDICINE BY SEX, 1977–78 THRU 1990–91

YEAR	Applicants			1st Yr. Enrollment			Total Enrollment			Graduates		
	Total	Women	%W	Total	Women	%W	Total	Women	%W	Total	Women	%W
1977–78	3,918	559	14.3	1,163	192	16.5	3,926	570	14.5	971	68	7.0
1978–79	3,530	610	17.3	1,322	222	16.8	4,221	688	16.3	1,004	163	16.2
1979–80	3,856	765	19.8	1,426	265	18.6	4,571	789	17.3	1,059	192	18.1
1980–81	3,786	804	21.2	1,496	329	22.0	4,940	971	19.7	1,151	202	17.5
1981–82	3,885	901	23.2	1,582	378	23.9	5,304	1,108	20.9	1,017	186	18.3
1982–83	3,917	965	24.6	1,682	428	25.4	5,822	1,317	22.6	1,317	261	19.8
1983–84	4,045	1,092	27.0	1,746	460	26.3	6,212	1,526	24.6	1,287	262	20.4
1984–85	4,126	1,168	28.3	1,750	511	29.2	6,547	1,707	26.1	1,474	344	23.3
1985–86	3,869	1,102	28.5	1,760	515	29.3	6,671	1,768	26.5	1,560	392	25.1
1986–87	3,514	1,109	31.6	1,724	471	27.3	6,640	1,853	27.9	1,587	412	26.0
1987–88	3,326	1,002	31.6	1,692	490	27.3	6,586	1,904	27.9	1,572	438	26.0
1988–89	3,030	966	31.9	1,780	571	29.0	6,614	1,986	28.9	1,609	491	27.9
1989–90	3,160	1,068	33.8	1,844	615	32.1	6,615	2,056	30.0	1,529	431	30.0
1990–91	3,224	1,085	33.7	1,950	667	34.2	6,792	2,221	32.7	1,534	458	29.9
TOTALS	51,186	13,196	25.8	22,917	6,114	26.7	81,461	20,464	25.1	18,671	4,300	23.0

FILED: Nursing

SOURCE: Earned Degrees Conferred Series, 1969–90, National Center for Education Statistics,

TABLE 8-33

NURSING DEGREES BY SEX AND LEVEL OF DEGREE 1969–70 – 1989–90

YEAR	BACHELORS			MASTERS			DOCTORATES		
	Total	Women	%Wom	Total	Women	%Wom	Total	Women	%Wom
1969–70	11,280	11,120	98.6	1,549	1,531	98.8	11	10	90.9
1970–71	12,283	12,029	97.9	1,542	1,511	98.0	7	6	85.7
1971–72	13,245	12,902	97.4	1,846	1,815	98.3	10	10	100.0
1972–73	15,526	15,063	97.0	2,093	1,983	94.7	17	13	76.5
1973–74	19,409	18,653	96.1	2,293	2,229	97.2	14	14	100.0
1974–75	23,813	22,709	95.4	2,220	2,154	97.0	16	16	100.0
1975–76	26,846	25,484	94.9	3,058	2,968	97.1	16	16	100.0
1976–77	28,402	26,870	94.6	3,257	3,155	96.9	24	22	91.7
1977–78	30,307	28,661	94.6	3,812	3,671	96.3	56	53	94.6
1978–79	31,808	30,002	94.3	4,256	4,088	96.1	68	65	95.6
1979–80	32,852	31,054	94.5	4,637	4,464	96.3	118	116	98.3
1980–81	32,794	31,140	95.0	5,096	4,899	96.1	113	109	96.5
1981–82	33,177	31,482	94.9	5,312	5,034	94.8	134	128	95.5
1982–83	31,442	29,965	95.3	4,451	4,298	96.6	124	117	94.4
1983–84	33,092	31,263	94.5	5,744	5,296	92.2	220	204	92.7
1984–85	33,654	31,717	94.2	5,761	5,303	92.0	273	246	90.1
1985–86	34,097	32,139	94.3	6,050	5,571	92.1	277	257	92.8
1986–87	33,976	32,126	94.6	6,184	5,756	93.1	275	248	90.2
1987–88	31,569	29,945	94.9	6,400	5,928	92.6	283	256	90.5
1988–89	30,086	28,504	94.7	6,466	5,930	91.7	371	344	92.7
1989–90	28,896	27,184	94.1	6,724	6,170	91.8	333	302	90.7
TOTALS	568,554	540,012	95.0	88,751	83,754	94.4	2,760	2,552	92.5

Source: American Association of Colleges of Nursing

TABLE 8-34

NURSING ENROLLMENTS BY PROGRAM, RACE/ETHNICITY, CITIZENSHIP AND SEX, 1990–91

Sex, Race/ Ethnicity and Citizenship	Undergraduate						Graduate					
	General	%Gen	RN	%RN	Comb. Bacc.	%CB	Masters	%Mas	PhD	%PhD	Post Doc	%PD
Total	64,396	100	21,879	100	90,379	100	21,115	100	2,500	100	26	100
Women	57,483	89.3	20,713	94.7	81,931	90.7	19,882	94.2	2,259	90.4	24	92.3
Men	5,211	8.1	1,039	4.7	6,482	7.2	942	4.5	87	3.5	0	0.0
No Report	1,702	2.6	127	0.6	1,966	2.2	291	1.4	154	6.2	2	7.7
White	51,298	79.7	18,173	83.1	71,867	79.5	18,368	87.0	2,183	87.3	21	80.8
Asian	2,021	3.1	397	1.8	2,476	2.7	577	2.7	69	2.8	1	3.8
Black	6,579	10.2	1,819	3.3	8,745	9.7	1,186	5.6	109	4.4	3	11.5
Native Am.	322	0.5	151	0.7	492	0.5	76	0.4	11	0.4	0	0.0
Hispanic	1,737	2.7	775	3.5	2,613	2.9	365	1.7	49	2.0	0	0.0
Foreign	166	0.3	190	0.9	388	0.4	90	0.4	49	2.0	0	0.0
No Report	2,273	3.5	374	1.7	3,798	4.2	453	2.1	30	1.2	1	3.8

TABLE 8-35

NURSING GRADUATES BY PROGRAM, RACE/ETHNICITY, CITIZENSHIP AND SEX, 1989–90

Sex, Race/ Ethnicity and Citizenship	Undergraduates						Graduates					
	General	%Gen	RN	%RN	Comb. Bacc.	%CB	Masters	%Mas	PhD	%PhD	Post Doc	%PD
Total	14,341	100	7,260	100	21,883	100	5,079	100	255	100	7	100
Women	13,233	92.3	6,832	94.1	20,308	92.8	4,865	95.8	233	91.4	6	85.7
Men	902	6.3	340	4.7	1,259	5.8	191	3.8	10	3.9	1	14.3
No Report	206	1.4	88	1.2	316	1.4	23	0.5	12	4.7	0	0.0
White	11,563	80.6	5,806	80.0	17,562	80.3	4,562	89.8	233	91.4	7	100.0
Asian	355	2.5	102	1.4	481	2.2	110	2.2	8	3.1	0	0.0
Black	1,156	8.1	511	7.0	1,695	7.7	231	4.5	6	2.4	0	0.0
Native Am.	51	0.4	66	0.9	117	0.5	16	0.3	0	0.0	0	0.0
Hispanic	368	2.6	142	2.0	520	2.4	56	1.1	2	0.8	0	0.0
Foreign	10	0.1	22	0.3	37	0.2	11	0.2	2	0.8	0	0.0
No Report	838	5.8	653	9.0	1,471	6.7	93	1.8	4	1.6	0	0.0

TABLE 8-36

NURSING SCHOOL FACULTY BY RANK, DEGREE LEVEL AND SEX, 1990–91

Rank and Degree Level	Total	Women		Men		Rank and Degree Level	Total	Women		Men	
		No	%	No.	%			No	%	No.	%
Professor	679	662	8.6	17	9.4	Instructor	1189	1161	15.1	28	15.6
Doctoral	618	601	18.8	17	18.1	Doctoral	31	29	0.9	2	2.1
Nondoctoral	61	61	1.4	0	0.0	Nondoctoral	1158	1,132	25.1	26	30.2
Associate Prof	2118	2070	26.9	48	26.7	Other Faculty	458	451	5.9	7	3.9
Doctoral	1405	1,366	42.7	39	41.5	Doctoral	46	46	1.4	0	0.0
Nondoctoral	713	704	15.6	9	10.5	Nondoctoral	412	405	9.0	7	8.1
Assistant Prof	3442	3362	43.6	80	44.4	**Total Faculty**	**7886**	**7706**	**100.0**	**180**	**100.0**
Doctoral	1193	1,157	36.2	36	38.3	**Doctoral**	**3293**	**3199**	**41.5**	**94**	**52.2**
Nondoctoral	2249	2,205	48.9	44	51.2	**Nondoctoral**	**4593**	**4507**	**58.5**	**86**	**47.8**

FIELD: Podiatry

SOURCE: Minorities and Women in the Health fields, 1974; and Women in Health Careers, Health Resources Administration, U.S. Dept. of HEW; and personal communications American Association of Colleges of Podiatric Medicine,10/89 and 5/92.

TABLE 8-37

ENROLLMENTS IN COLLEGES OF PODIATRIC MEDICINE BY SEX, FALL 1969 THRU 1989

YEAR	Total	Men	%M	Women	%W
1969	1,095	1,085	99.1	10	0.9
1970	1,148	1,132	98.6	16	1.4
1971	1,268	1,252	98.7	16	1.3
1972	1,401	1,380	98.5	21	1.5
1973	1,623	1,583	97.5	40	2.5
1974	1,835	1,777	96.8	58	3.2
1975	2,081	1,981	95.2	100	4.8
1976	2,204	2,047	92.9	157	7.1
1977	2,388	2,129	89.2	259	10.8
1978	2,498	2,230	89.3	268	10.7
1979	2,531	2,226	87.9	305	12.1
1980	2,577	2,271	88.1	306	11.9
1981	2,584	2,223	86.0	361	14.0
1982	2,608	2,180	83.6	428	16.4
1983	2,556	2,080	81.4	476	18.6
1984	2,616	2,047	78.2	569	21.8
1985	2,749	2,129	77.4	620	22.6
1986	2,832	2,160	76.3	672	23.7
1987	2,790	2,110	75.6	680	24.4
1988	2,608	1,937	74.3	671	25.7
1989	2,397	1,765	73.6	632	26.4

TABLE 8-38

MINORITY ENROLLMENT IN COLLEGES OF PODIATRIC MEDICINE, 1978 – 1990

Fall Year	Total Students	Black		Hispanic		Am. Indian		Asian/Pac		Total Min.*	
		No.	%	No.	%	No	%	No.	%	No.	%
1978	2,498	77	3.1	27	1.1	8	0.3	51	2.0	163	6.5
1979	2,531	93	3.7	28	1.1	5	0.2	63	2.5	189	7.5
1980	2,577	110	4.3	32	1.2	6	0.2	68	2.6	216	8.4
1981	2,584	125	4.8	40	1.5	5	0.2	68	2.6	238	9.2
1982	2,608	154	5.9	33	1.3	5	0.2	75	2.9	267	10.2
1983	2,556	170	6.7	41	1.6	9	0.4	68	2.7	288	11.3
1984	2,616	185	7.1	57	2.2	11	0.4	99	3.8	352	13.5
1985	2,749	208	7.6	71	2.6	14	0.5	110	4.0	403	14.7
1986	2,832	216	7.6	77	2.7	6	0.2	127	4.5	426	15.0
1987	2,790	236	8.5	89	3.2	8	0.3	151	5.4	489	17.5
1988	2,608	237	9.1	95	3.6	5	0.2	156	6.0	506	19.4
1989	2,397	240	10.0	123	5.1	6	0.3	159	6.6	528	22.0
1990	2,485	235	9.5	149	6.0	7	0.3	159	6.4	550	22.1

* May include "other" minorities

FIELD: Podiatry

SOURCE: Seventh Report to the President and Congress on the Status of Health Personnel in the U.S., Health Resources and Services Administraton.

TABLE 8-39

WOMEN AND MINORITY GRADUATES OF PODIATRIC COLLEGES 1982–83 – 1987–88

Academic Year	All Graduates	Women		Minorities	
		No.	%W	No.	%M
1982–83	631	77	12.2	36	5.7
1983–84	607	77	12.7	57	9.4
1984–85	582	116	19.9	64	11.0
1985–86	612	124	20.3	64	10.5
1986–87	590	123	20.8	66	11.2
1987–88	647	150	23.2	93	14.4
Totals	3,669	667	18.2	380	10.4

FIELD: Veterinary Medicine

SOURCE: Personal Communications, Association of American Veterinary Medical Colleges

TABLE 8-40

ENROLLMENTS AND GRADUATES IN U.S. SCHOOLS OF VETERINARY MEDICINE BY SEX AND MINORITY GROUP, 1986–87 thru 1991–92

	First Year Enrollment																	
	Total			Minority			Black			Hispanic			Asian/Pac Is			Nat. American		
Fall	No.	Women	%W	No.	Wom	%W	No.	Wom	%B	No.	Wom	%H	No.	Wom	%A	No.	Wom	%I
1986	2,273	1,329	58.5	160	99	61.9	65	36	2.9	53	35	2.3	32	22	1.4	10	6	0.4
1988	2,195	1,293	58.9	170	107	62.9	64	39	2.9	61	38	2.8	32	22	1.5	13	8	0.6
1989	2,194	1,373	62.6	175	125	71.4	62	45	2.8	65	45	3.0	37	27	1.7	11	8	0.5
1990	2,197	1,353	61.6	176	115	65.3	61	45	2.8	66	35	3.0	32	24	1.5	13	9	0.6
1991	2,225	1,439	64.7	172	104	60.5	50	32	2.2	65	36	2.9	43	29	1.9	14	7	0.6
	Total Enrollment																	
1986	8,887	4,714	53.0	569	307	54.0	202	115	2.3	197	88	2.2	122	80	1.4	48	24	0.5
1988	8,558	4,895	57.2	563	336	59.7	200	117	2.3	196	110	2.3	120	82	1.4	47	27	0.5
1989	8,456	4,995	59.1	610	381	62.5	219	137	2.6	220	130	2.6	133	91	1.6	38	23	0.4
1990	8,420	5,062	60.1	633	402	63.5	215	144	2.6	243	138	2.9	118	86	1.4	44	28	0.5
1991	8,440	5,238	62.1	636	404	63.5	192	133	2.3	257	147	3.0	141	97	1.7	45	27	0.5

TABLE 8-41

ENROLLMENTS AND GRADUATES IN U.S. SCHOOLS OF VETERINARY MEDICINE BY SEX, 1986–87 thru 1991–92

	First Year Enrollment			Total Enrollment			Graduates		
Year	Total	Women	%W	Total	Women	%W	Total	Women	%W
1968–69	1,327	120	9.0	4,779	362	7.6	1,006	56	5.6
1969–70	1,386	159	11.5	4,726	417	8.8	1,206	90	7.5
1970–71	1,439	158	11.0	4,716	444	9.4	1,252	98	7.8
1971–72	1,509	228	15.1	5,163	593	11.5	1,247	117	9.4
1972–73	1,760	327	18.6	5,439	745	13.7	1,299	133	10.2
1973–74	1,520	350	23.0	5,528	957	17.3	1,384	155	11.2
1974–75	1,792	453	25.3	5,985	1,220	20.4	1,415	225	15.9
1975–76	1,807	618	34.2	6,274	1,719	27.4	1,532	277	18.1
1976–77	1,856	598	32.2	6,571	1,805	27.5	1,586	362	22.8
1977–78	1,873	706	37.7	6,903	2,129	30.8	1,635	409	25.0
1978–79	2,086	766	36.7	7,312	2,471	33.8	1,704	499	29.3
1979–80	2,264	912	40.3	7,594	2,751	36.2	1,852	615	33.2
1980–81	2,237	987	44.1	8,154	3,220	39.5	1,931	702	36.4
1981–82	2,313	1,100	47.6	8,499	3,576	42.1	1,886	668	35.4
1982–83	2,247	1,124	50.0	8,682	4,028	46.4	2,012	822	40.9
1983–84	2,320	1,127	48.6	8,816	4,152	47.1	2,138	887	41.5
1984–85	2,327	1,140	49.0	8,917	4,376	49.1	2,149	1038	48.3
1985–86	2,282	1,265	55.4	8,938	4,536	50.7	2,104	1021	48.5
1986–87	2,273	1,329	58.5	8,887	4,714	53.0	2,104	1021	48.5
1987–88	2,207	1,246	56.5	8,751	4,816	55.0	2,219	1069	48.2
1988–89	2,185	1,293	59.2	8,558	4,895	57.2	2,212	1007	45.5
1989–90	2,194	1,373	62.6	8,456	4,995	59.1	2,142	1180	55.1
1990–91	2,197	1,353	61.6	8,420	5,062	60.1	2,021	1151	57.0
1991–92	2,225	1,439	64.7	8,440	5,238	62.1			
Totals	47,626	20,171	42.4	174,508	69,221	39.7	40,036	13,602	34.0

FIELD: Veterinary Medicine

SOURCE: Personal Communications, Association of American Veterinary Medical Colleges

TABLE 8-42

FACULTY OF U.S. SCHOOLS AND COLLEGES OF VETERINARY MEDICINE, 1987, '89 & '90

				Minority			Black			Hispanic			Asian/Pac Is			Indian		
Year	Total	Wom	%W	No.	Wom	%W	No.	Wom	%W	No.	Wom	%W	No.	Wom	%W	No.	Wom	%W
1987	2,809	400	14.2	185	25	13.5	58	7	12.1	26	6	23.1	99	20	20.2	2	0	0.0
1989	2,903	506	17.4	201	30	14.9	75	16	21.3	25	4	16.0	99	10	10.1	2	0	0.0
1990	2964	493	16.6	220	33	15.0	82	17	20.7	29	7	24.1	106	8	7.5	3	1	33.3

TABLE 8-43

AVMA* VETERINARIANS BY SEX, SELECTED YEARS, 1983- 90

Year	TOTAL	Women	%Wom
1983	37,715	5,265	14.0
1985	40,137	6,092	15.2
1986	43,456	8,117	18.7
1989	48,017	11,115	23.1
1990	49,439	12,200	24.7

* The American Veterinary Medicine Association estimates its membership to include 80–85 percent of all veterinarians.
+ 1990 number of women is estimated by AVMA.

SOURCE: Seventh Report to the President and Congress on the Status of Health Personnel in the U.S., Health Resources and Services Administraton.

TABLE 8-44

VETERINARIANS BY TYPE OF EMPLOYMENT AND SEX DECEMBER, 1988

Type of Employment	All		Men		Women		
	Number	V %	Number	V %	Number	V %	%W
Total	47,500	100.0	37,600	100.0	9,900	100.0	20.8
Self-employed	21,500	45.3	19,400	51.6	2,100	21.2	9.8
Private Practice	15,700	33.1	10,100	26.9	5,600	56.6	35.7
College or University.	4,600	9.7	3,300	8.8	1,300	13.1	28.3
Industry	1,200	2.5	1,100	2.9	100	1.0	8.3
Federal Government	1,600	3.4	1,400	3.7	200	2.0	12.5
Armed Forces	700	1.5	600	1.6	100	1.0	14.3
State or Local Govt.	900	1.9	800	2.1	100	1.0	11.1
Other	500	1.1	100	0.3	400	4.0	80.0

FIELD: Audiology and Speech Pathologyy

SOURCE: Earned Degrees Conferred Series, 1971–90, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 8-45

AUDIOLOGY AND SPEECH PATHOLOGY DEGREES BY SEX AND LEVEL OF DEGREE 1970–71 – 1989–90

YEAR	BACHELORS			MASTERS			DOCTORS		
	Total	Women	%Wom	Total	Women	%Wom	Total	Women	%Wom
1970–71	1,427	1,251	87.7	845	690	81.7	70	22	31.4
1971–72	1,863	1,609	86.4	1,033	881	85.3	58	29	50.0
1972–73	2,574	2,259	87.8	1,417	1175	82.9	69	23	33.3
1973–74	3,278	2,934	89.5	1,964	1671	85.1	78	28	35.9
1974–75	3,732	3,345	89.6	2,377	2011	84.6	71	30	42.3
1975–76	3,925	3,582	91.3	3,119	2724	87.3	109	46	42.2
1976–77	3,864	3,555	92.0	3,019	2704	89.6	96	49	51.0
1977–78	3,551	3,247	91.4	3,190	2921	91.6	121	58	47.9
1978–79	3,554	3,297	92.8	3,490	3180	91.0	113	60	53.1
1979–80	3,576	3,319	92.8	3,304	3056	92.5	110	56	50.9
1980–81	3,445	3,225	93.6	3,226	2982	92.4	112	59	52.7
1981–82	3,414	3,234	94.7	3,104	2895	93.3	114	67	58.8
1982–83	2,909	2,847	97.9	2,737	2547	93.1	92	61	66.3
1983–84*	430	410	95.3	171	161	94.2	0	0	0.0
1984–85	393	376	95.7	241	225	93.4	0	0	0.0
1985–86	409	388	94.9	254	246	96.9	0	0	0.0
1986–87	2,563	2,435	95.0	2,985	2,820	94.5	89	65	73.0
1987–88	2,485	2,379	95.7	2,810	2,656	94.5	82	52	63.4
1988–89	2,486	2,379	95.7	2,763	2,616	94.7	84	63	75.0
1989–90	2,823	2,684	95.1	2,901	2,769	95.4	92	69	75.0
TOTAL	52,701	48,755	92.5	44,956	40,930	91.0	1,560	837	53.7

* Redefined as Speech–language pathology and audiology. Reversed in 1986–87

FIELD: Health Services Adminsitration

SOURCE: Earned Degrees Conferred Series, 1969–90, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 8-46

HEALTH SERVICES ADMISTRATION DEGREES BY SEX AND LEVEL OF DEGREE 1968–69 – 1988–90

YEAR	BACHELORS			MASTERS			DOCTORATES		
	Total	Women	%Wom	Total	Women	%Wom	Total	Women	%Wom
1968–69	37	3	8.1	403	59	14.6	2	1	50.0
1969–70	32	6	18.8	479	64	13.4	7	0	0.0
1970–71	60	4	6.7	518	64	12.4	14	0	0.0
1971–72	126	55	43.7	677	102	15.1	12	0	0.0
1972–73	121	16	13.2	743	82	11.0	12	2	16.7
1973–74	185	32	17.3	990	206	20.8	21	4	19.0
1974–75	306	99	32.4	997	196	19.7	13	0	0.0
1975–76	421	150	35.6	1,139	278	24.4	11	0	0.0
1976–77	668	320	47.9	1,354	355	26.2	18	3	16.7
1977–78	1,158	716	61.8	1,565	567	36.2	12	2	16.7
1978–79	1,338	864	64.6	1,748	671	38.4	16	4	25.0
1979–80	1,692	1,154	68.2	1,698	718	42.3	13	4	30.8
1980–81	1,581	1,043	66.0	1,996	933	46.7	12	2	16.7
1981–82	1,978	1,397	70.6	1,640	805	49.1	20	5	25.0
1982–83	2,267	1,701	75.0	1,729	903	52.2	14	4	28.6
1983–84	3,014	2,442	81.0	2,176	1,215	55.8	27	12	44.4
1984–85	3,171	2,494	78.7	2,384	1,378	57.8	24	13	54.2
1985–86	3,154	2,544	80.7	2,549	1,562	61.3	26	8	30.8
1986–87	3,210	2,524	78.6	2,592	1,637	63.2	23	9	39.1
1987–88	3,242	2,609	80.5	2,873	1,835	63.9	33	18	54.5
1988–89	3,271	2,576	78.8	2,911	1,930	66.3	27	14	51.9
1989–90	3,220	2,562	79.6	2,978	1,981	66.5	29	17	58.6
TOTALS	34,252	25,311	73.9	36,139	17,541	48.5	386	122	31.6

FIELD: Medical Lab Technologies

SOURCE: Earned Degrees Conferred Series, 1969–90, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 8-47

MEDICAL LAB TECHNOLOGIES DEGREES BY SEX AND LEVEL OF DEGREE, 1968–69 – 1989–90

YEAR	BACHELORS			MASTERS		
	Total	Women	%Wom	Total	Wom	%Wom
1968–69	2,846	2,551	89.6	28	23	82.1
1969–70	3,228	2,823	87.5	71	57	80.3
1970–71	3,145	2,755	87.6	72	55	76.4
1971–72	3,407	2,880	84.5	97	62	63.9
1972–73	3,806	3,102	81.5	95	77	81.1
1973–74	4,840	3,864	79.8	164	95	57.9
1974–75	5,087	4,005	78.7	174	91	52.3
1975–76	5,445	4,356	80.0	266	137	51.5
1976–77	5,286	4,242	80.2	333	184	55.3
1977–78	5,288	4,221	79.8	292	175	59.9
1978–79	5,235	4,143	79.1	303	179	59.1
1979–80	5,130	4,128	80.5	231	154	66.7
1980–81	4,896	4,012	81.9	233	150	64.4
1981–82	4,596	3,794	82.6	207	131	63.3
1982–83	3,249	2,631	81.0	144	69	47.9
1983–84	2,714	2,179	80.3	46	33	71.7
1984–85	2,720	2,222	81.7	28	18	64.3
1985–86	2,554	2,072	81.1	33	25	75.8
1986–87	2,226	1,747	78.5	28	22	78.6
1987–88	1,944	1,547	79.6	38	27	71.1
1988–89	1,814	1,438	79.3	24	19	79.2
1989–90	1,772	1,341	75.7	31	23	74.2
TOTALS	81,228	66,053	81.3	2,938	1,806	61.5

FIELD: Physical Therapy

SOURCE: Earned Degrees Conferred Series, 1969–90, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 8-48

PHYSICAL THERAPY DEGREES BY SEX AND LEVEL OF DEGREE 1968–69 THRU 1989–90

	BACHELORS			MASTERS		
	Both	Women	%	Both	Women	%
1968–69	1,071	922	86.1	41	30	73.2
1969–70	1,091	922	84.5	49	32	65.3
1970–71	1,306	1,045	80.0	75	56	74.7
1971–72	1,483	1,182	79.7	55	30	54.5
1972–73	1,756	1,381	78.6	78	51	65.4
1973–74	1,900	1,497	78.8	111	77	69.4
1974–75	2,121	1,615	76.1	133	85	63.9
1975–76	2,091	1,620	77.5	167	113	67.7
1976–77	2,333	1,790	76.7	162	101	62.3
1977–78	2,418	1,903	78.7	258	184	71.3
1978–79	2,651	2,079	78.4	242	154	63.6
1979–80	2,372	1,845	77.8	282	203	72.0
1980–81	2,745	2,213	80.6	250	186	74.4
1981–82	2,736	2,200	80.4	317	233	73.5
1982–83	2,581	2,074	80.4	303	198	65.3
1983–84	2,947	2,395	81.3	399	289	72.4
1984–85	3,129	2,503	80.0	400	286	71.5
1985–86	3,039	2,412	79.4	405	292	72.1
1986–87	3,239	2,571	79.4	522	395	75.7
1987–88	3,320	2,600	78.3	644	510	79.2
1988–89	3,514	2,724	77.5	757	563	74.4
1989–90	3,502	52,697	1504.8	919	690	75.1
TOTALS	53,345	92,190	172.8	6,569	4,758	72.4

SOURCE: Office of Personnel Management, unpublished tabulations

TABLE 8-49

FEDERAL WORKERS EMPLOYED IN MEDICAL AND HEALTH SCIENCES BY OCCUPATIONAL TITLE, SEX AND MINORITY STATUS, SEPTEMBER 30, 1991

	ALL EMPLOYEES			TOTAL MINORITY				BLACK		HISPANIC		ASIAN		AM. INDIAN		WHITE	
OCCUPATIONAL TITLE	TOTAL	WOMEN	% W	TOTAL	%	WOMEN	% W	No.	% B	No.	% H	No.	% A	No.	% I	No.	% W
General Health Science	3580	1706	47.7	579	16.2	284	49.1	279	7.8	117	3.3	149	4.2	34	0.9	3001	83.8
Medical Officer	36381	8249	22.7	7853	21.6	2191	27.9	1213	3.3	1822	5.0	4700	12.9	118	0.3	28528	78.4
Nurse Anesthetist	489	269	55.0	63	12.9	47	74.6	34	7.0	18	3.7	10	2.0	1	0.2	426	87.1
Nurse	47441	42955	90.5	13169	27.8	12214	92.7	6220	13.1	2384	5.0	3637	7.7	928	2.0	34272	72.2
Dietitian & Nutritionist	1809	1719	95.0	383	21.2	369	96.3	194	10.7	68	3.8	100	5.5	21	1.2	1426	78.8
Occupational Therapist	759	677	89.2	143	18.8	128	89.5	65	8.6	45	5.9	31	4.1	2	0.3	616	81.2
Physical Therapist	682	499	73.2	119	17.4	93	78.2	38	5.6	65	9.5	13	1.9	3	0.4	563	82.6
Corrcetive Therapist	525	174	33.1	164	31.2	69	42.1	141	26.9	11	2.1	11	2.1	1	0.2	361	68.8
Manual Arts Therapist	183	22	12.0	25	13.7	2	8.0	18	9.8	3	1.6	3	1.6	1	0.5	158	86.3
Recreational/Creative Arts Therapist	792	430	54.3	133	16.8	63	47.4	103	13.0	26	3.3	3	0.4	1	0.1	659	83.2
Educational Therapist	43	27	62.8	7	16.3	6	85.7	7	16.3	0	0.0	0	0.0	0	0.0	36	83.7
Medical Technologist	5987	4148	69.3	1643	27.4	1132	68.9	665	11.1	304	5.1	564	9.4	110	1.8	4344	72.6
Pharmacist	4634	1858	40.1	1049	22.6	608	58.0	297	6.4	213	4.6	508	11.0	31	0.7	3585	77.4
Optometrist	266	71	26.7	30	11.3	12	40.0	5	1.9	9	3.4	15	5.6	1	0.4	236	88.7
Speech Path/Audiology	912	593	65.0	78	8.6	59	75.6	30	3.3	16	1.8	19	2.1	13	1.4	834	91.4
Podiatrist	277	37	13.4	37	13.4	9	24.3	19	6.9	6	2.2	11	4.0	1	0.4	240	86.6
Dental Officer	1447	202	14.0	184	12.7	41	22.3	57	3.9	62	4.3	61	4.2	4	0.3	1263	87.3
Induatrial Hygienist	1456	479	32.9	254	17.4	104	40.9	132	9.1	60	4.1	57	3.9	5	0.3	1202	82.6
Consumer Safety	1785	613	34.3	341	19.1	153	44.9	176	9.9	102	5.7	61	3.4	2	0.1	1444	80.9
Veterinary Medical Sci	2176	325	14.9	453	20.8	81	17.9	135	6.2	73	3.4	233	10.7	12	0.6	1723	79.2
TOTALS	111624	65053	58.3	26707	23.9	17665	66.1	9828	8.8	5404	4.8	10186	9.1	1269	1.2	84917	76.1

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 9-1

PhD AWARDS IN THE BEHAVIORAL AND SOCIAL SCIENCES BY SUBFIELD AND SEX, 1960 – 1991

	Year of Doctorate														
	1960–69			1970–79			1980–89			1990			1991		
Subfields	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W
TOTAL BEHAV & SOCIAL	25981	3816	14.7	59426	14784	24.9	66762	27124	40.6	6231	2925	46.9	6414	3167	49.4
PSYCHOLOGY	10969	2269	20.7	26139	8394	32.1	34815	17178	49.3	3267	1906	58.3	3240	1984	61.2
Clinical	3674	841	22.9	8126	2652	32.6	12920	6431	49.8	1329	781	58.8	1302	840	64.5
Cognitive(1)							606	255	42.1	76	35	46.1	94	46	48.9
Comparative(2)	115	17	14.8	218	58	26.6	115	45	39.1	8	3	37.5	7	5	71.4
Counseling(3)	679	131	19.3	2171	710	32.7	4664	2343	50.2	464	280	60.3	495	306	61.8
Developmental(4)	359	165	46.0	1647	880	53.4	2084	1399	67.1	158	111	70.3	156	120	76.9
Experimental(2)	1916	287	15.0	3439	834	24.3	2110	817	38.7	143	49	34.3	142	64	45.1
Educational	550	156	28.4	1250	442	35.4	1480	788	53.2	98	69	70.4	110	64	58.2
Exper, Compar, Physiol(2)	457	59	12.9												
Indust, Organizational(5)	436	18	4.1	732	93	12.7	1066	388	36.4	124	53	42.7	142	76	53.5
Personality	285	60	21.1	528	190	36.0	314	145	46.2	20	10	50.0	13	4	30.8
Physiological(2)	517	75	14.5	1224	311	25.4	914	327	35.8	46	28	60.9	45	21	46.7
Psychometrics	188	26	13.8	230	39	17.0	129	57	44.2	8	4	50.0	9	3	33.3
Quantitative(1)							122	43	35.2	15	3	20.0	7	2	28.6
School	185	47	25.4	1046	437	41.8	1300	719	55.3	81	53	65.4	82	57	69.5
Social	1029	231	22.4	1992	598	30.0	1769	902	51.0	145	92	63.4	147	86	58.5
Psychology, General	395	118	29.9	2017	662	32.8	3190	1573	49.3	373	233	62.5	321	182	56.7
Psychology, Other	184	38	20.7	1519	488	32.1	2032	946	46.6	179	102	57.0	168	108	64.3
SOCIAL SCIENCES	15012	1547	10.3	33287	6390	19.2	31947	9946	31.1	2964	1019	34.4	3174	1183	37.3
Anthropology	1015	218	21.5	3402	1180	34.7	3868	1868	48.3	324	172	53.1	340	209	61.5
Archeology	100	34	34.0	220	95	43.2	211	112	53.1	22	12	54.5	33	20	60.6
Area Studies	101	16	15.8	377	72	19.1	220	61	27.7	22	9	40.9	23	4	17.4
Criminology(9)							377	108	28.6	42	16	38.1	35	18	51.4
Demography(1)							174	71	40.8	20	11	55.0	27	16	59.3
Economics	5286	245	4.6	8318	735	8.8	8751	1427	16.3	836	169	20.2	853	173	20.3
Econometrics	207	9	4.3	268	12	4.5	268	29	10.8	26	3	11.5	24	5	20.8
Geography	695	38	5.5	1666	168	10.1	1286	295	22.9	131	35	26.7	108	33	30.6
History of science(6)				282	67	23.8	225	76	33.8	26	9	34.6	27	11	40.7
International Relations	712	74	10.4	1121	135	12.0	907	163	18.0	96	15	15.6	88	24	27.3
Linguistics	738	168	22.8	1715	615	35.9	1778	805	45.3	107	89	83.2	227	110	48.5
Pol Sci & Government(7)							3272	829	25.3	462	107	23.2	434	118	27.2
Political Science(7)				2369	422	17.8	1409	304	21.6						
Pol Sci, Public Admin(7)	3123	259	8.3	4351	560	12.9									
Public Policy Studies(1)							575	211	36.7	88	26	29.5	111	38	34.2
Sociology	2538	445	17.5	6356	1812	28.5	5535	2441	44.1	427	206	48.2	466	231	49.6
Statistics	134	9	6.7	623	59	9.5	552	124	22.5	69	12	17.4	31	10	32.3
Urban Studies(8)				623	93	14.9	842	240	28.5	67	21	31.3	89	21	23.6
Social Sciences, General	65	7	10.8	300	84	28.0	277	96	34.7	23	9	39.1	36	17	47.2
Social Sciences, Other	298	25	8.4	1296	281	21.7	1447	701	48.4	176	98	55.7	222	125	56.3

(1) Introduced in 1983. (2) "Experimental, comparative, and physiological psychology" split into separate subfields in 1962. (3) Changed from "Counseling and guidance" to "Counseling" in 1983. (4) Changed from "Developmental and gerontological" to "Developmental" in 1963. (5) Changed from "Industrial and personnel" to "Industrial and organizational" in 1963. (6) "History and philosophy of science" before 1983; introduced in 1971. (7) "Political science, public administration" split into separate subfields in 1976 with "Public administration" then not included in science or engineering fields. In 1983, "Political science and government" replaced "Political science." (8) Introduced in 1970 as "Urban and regional planning." (9) Introduced in 1980.

SOURCE: Series of Earned Degrees Conferred, 1950–90, National Center for Education Statistics

TABLE 9-2

SOCIAL SCIENCES PhDs BY SEX AND SUBFIELD, 1950 – 1990

Total Social Sciences				Economics				Political Science				Sociology				Other			
Year	Total	Wom	%W	No.	%T	Wom	%W	No.	%T	Wom	%W	No.	%T	Wom	%W	No.	%T	Wom	%W
1950	499	48	10	200	40	9	5	127	25	10	8	98	20	18	18	74	15	11	15
1951	616	58	9	236	38	17	7	152	25	9	6	129	21	18	14	99	16	14	14
1952	601	56	9	239	40	16	7	147	24	12	8	141	23	20	14	74	12	8	11
1953	615	43	7	222	36	8	4	164	27	12	7	157	26	12	8	72	12	11	15
1954	679	58	9	245	36	12	5	153	23	10	7	184	27	28	15	97	14	8	8
1955	681	48	7	241	35	9	4	181	27	10	6	167	25	20	12	92	14	9	10
1956	777	62	8	232	30	11	5	203	26	15	7	170	22	29	17	172	22	7	4
1957	715	48	7	236	33	9	4	156	22	7	4	134	19	16	12	189	26	16	8
1958	767	65	8	239	31	5	2	170	22	6	4	150	20	28	19	208	27	26	13
1959	765	73	10	221	29	10	5	191	25	15	8	157	21	16	10	196	26	32	16
1960	841	76	9	237	28	14	6	201	24	17	8	161	19	26	16	242	29	19	8
1961	904	76	8	266	29	13	5	217	24	13	6	184	20	32	17	237	26	18	8
1962	939	76	8	268	29	15	6	214	23	12	6	173	18	26	15	284	30	23	8
1963	1055	103	10	331	31	20	6	228	22	13	6	208	20	31	15	288	27	39	14
1964	1161	98	8	385	33	17	4	263	23	21	8	198	17	29	15	315	27	31	10
1965	1290	107	8	410	32	17	4	304	24	26	9	230	18	36	16	346	27	28	8
1966	1406	144	10	458	33	22	5	336	24	29	9	244	17	36	15	368	26	57	15
1967	1882	194	12	546	32	37	7	390	23	38	10	327	19	59	18	419	25	60	14
1968	1907	214	11	600	31	35	6	457	24	52	11	367	19	68	19	483	25	59	12
1969	2112	247	12	634	30	43	7	467	22	49	10	430	20	86	20	581	28	69	12
1970	2503	298	12	794	32	52	7	525	21	56	11	534	21	104	19	650	26	86	13
1971	2778	384	14	721	26	53	7	700	25	85	12	574	21	119	21	783	28	127	16
1972	2951	397	13	794	27	60	8	758	26	80	11	636	22	136	21	763	26	121	16
1973	3145	494	16	845	27	52	6	747	24	95	13	583	19	154	26	970	31	193	20
1974	3110	572	18	788	25	75	10	766	25	111	14	632	20	177	28	924	30	209	23
1975	3123	608	19	815	26	73	9	680	22	111	16	693	22	209	30	935	30	215	23
1976	3136	690	22	763	24	81	11	723	23	121	17	729	23	218	30	921	29	270	29
1977	2995	654	22	758	25	86	11	641	21	100	16	714	24	234	33	882	29	234	27
1978	2840	688	24	706	25	80	11	636	22	119	19	599	21	223	37	899	32	266	30
1979	2699	680	25	712	26	93	13	563	21	99	18	612	23	221	36	812	30	267	33
1980	2635	713	27	677	26	102	15	535	20	107	20	583	22	228	39	840	32	276	33
1981	2639	693	26	727	28	100	14	484	18	96	20	610	23	239	39	818	31	258	32
1982	2550	691	27	699	27	96	14	513	20	112	22	558	22	207	37	780	31	276	35
1983	2507	750	30	734	29	123	17	435	17	101	23	522	21	221	42	816	33	305	37
1984	2473	759	31	729	29	109	15	457	18	105	23	520	21	231	44	767	31	314	41
1985	2470	792	32	749	30	122	16	441	18	115	26	480	19	248	52	800	32	307	38
1986	2598	849	33	789	30	157	20	439	17	115	26	504	19	227	45	864	33	350	41
1987	2444	765	31	750	31	126	17	435	18	119	27	451	18	180	40	808	33	340	42
1988	3054	1045	34	770	25	151	20	391	13	86	22	452	15	241	53	1441	47	567	39
1989	2692	1729	64	843	31	159	19	451	17	116	26	450	17	229	51	948	35	1225	129
1990	2521	823	33	970	38	195	20	477	19	122	26	436	17	207	47	638	25	299	47
50–59	6715	559	8	2311	34	106	5	1644	24	106	6	1487	22	205	14	1,273	19	142	11
60–69	13297	1335	10	4135	31	233	6	3077	23	270	9	2522	19	429	17	3,563	27	403	11
70–79	29260	5465	19	7698	26	705	9	6739	23	977	14	6306	22	1,795	28	8,539	29	1,988	23
80–89	26060	8786	34	7467	29	1245	17	4581	18	1072	23	5130	20	2251	44	8882	34	4218	47
TOTAL	77573	16988	22	22579	29	2484	11	16518	21	2547	15	15881	20	4887	31	22895	29	7050	31

SOURCE: Earned Degrees Conferred Series, 1950–90, National Center for Education Statistics, redefined by the National Science Foundation

TABLE 9-3

MASTERS DEGREES IN THE SOCIAL SCIENCES BY SUBFIELD AND SEX, 1950 – 1990

	Total Social Sciences			Economics				Political Sci				Sociology				Other			
Year	No.	Women	%W	No.	%T	Wom	%W	No.	%T	Wom	%W	No.	%T	Wom	%W	No.	%T	Wom	%W
1950	2468	484	20	921	37	114	12	710	29	113	16	552	22	179	32	285	12	78	27
1951	2343	375	16	809	35	71	9	657	28	90	14	584	25	162	28	293	13	52	18
1952	2007	339	17	695	35	83	12	525	26	76	14	517	26	131	25	270	13	49	18
1953	1865	326	17	582	31	61	10	509	27	76	15	504	27	139	28	270	14	50	19
1954	1854	306	17	609	33	62	10	534	29	79	15	440	24	117	27	271	15	48	18
1955	1817	345	19	617	34	78	13	498	27	84	17	474	26	126	27	228	13	57	25
1956	1944	331	17	581	30	56	10	509	26	75	15	402	21	127	32	452	23	73	16
1957	2189	413	19	606	28	50	8	535	24	68	13	515	24	223	43	533	24	72	14
1958	2370	391	16	669	28	70	10	665	28	80	12	397	17	139	35	639	27	102	16
1959	2460	413	17	664	27	60	9	649	26	110	17	461	19	140	30	686	28	103	15
1960	2544	386	15	708	28	58	8	722	28	129	18	440	17	113	26	674	26	86	13
1961	2767	412	15	820	30	67	8	764	28	112	15	504	18	142	28	679	25	91	13
1962	3124	538	17	853	27	89	10	839	27	176	21	578	19	156	27	854	27	117	14
1963	3641	609	17	1029	28	82	8	1051	29	184	18	684	19	197	29	877	24	146	17
1964	3858	662	17	1111	29	98	9	1163	30	223	19	646	17	180	28	938	24	161	17
1965	4348	819	19	1268	29	150	12	1210	28	230	19	789	18	246	31	1081	25	193	18
1966	5243	1040	20	1,901	36	179	9	1,465	28	287	20	981	19	301	31	896	17	273	30
1967	6206	1209	19	2,147	35	180	8	1,814	29	399	22	1,193	19	358	30	1,052	17	274	26
1968	6894	1400	20	2,358	34	210	9	1,980	29	384	19	1,193	17	403	34	1,363	20	403	30
1969	7755	1635	21	2,537	33	255	10	2,149	28	416	19	1,656	21	531	32	1,413	18	433	31
1970	7981	1972	25	2,396	30	265	11	2,130	27	447	21	1,816	23	677	37	1,639	21	583	36
1971	8344	2089	25	2,415	29	276	11	2,318	28	479	21	1,815	22	679	37	1,796	22	655	36
1972	9065	2251	25	2,636	29	296	11	2,451	27	502	20	1,987	22	769	39	1,991	22	684	34
1973	9094	2291	25	2,662	29	302	11	2,399	26	480	20	1,950	21	783	40	2,083	23	726	35
1974	9358	2463	26	2,560	27	326	13	2,448	26	456	19	2,236	24	890	40	2,114	23	791	37
1975	9229	2539	28	2,522	27	351	14	2,333	25	476	20	2,135	23	816	38	2,239	24	896	40
1976	8944	2678	30	2,560	29	386	15	2,192	25	473	22	2,035	23	858	42	2,157	24	961	45
1977	8974	2753	31	2,662	30	431	16	2,223	25	504	23	1,851	21	827	45	2,238	25	991	44
1978	8320	2667	32	2,549	31	458	18	2,070	25	547	26	1,650	20	752	46	2,051	25	910	44
1979	7948	2623	33	2,468	31	450	18	2,038	26	558	27	1,451	18	694	48	1,991	25	921	46
1980	7658	2628	34	2,386	31	479	20	1,938	25	515	27	1,372	18	689	50	1,962	26	945	48
1981	7581	2725	36	2,498	33	557	22	1,876	25	534	28	1,255	17	657	52	1,952	26	977	50
1982	7566	2741	36	2,506	33	593	24	1,955	26	610	31	1,183	16	642	54	1,922	25	896	47
1983	7540	2786	37	2,568	34	611	24	1,829	24	543	30	1,157	15	642	55	1,986	26	990	50
1984	7307	2741	38	2,482	34	591	24	1,770	24	537	30	1,015	14	554	55	2,040	28	1,059	52
1985	7043	2662	38	2,532	36	612	24	1,500	21	438	29	1,045	15	575	55	1,966	28	1,037	53
1986	7126	2773	39	2,496	35	616	25	1,704	24	550	32	986	14	546	55	1,940	27	1,061	55
1987	6295	2509	40	1,865	30	476	26	1,618	26	507	31	970	15	545	56	1,842	29	981	53
1988	6272	2533	40	1,840	29	470	26	1,577	25	522	33	1,013	16	576	57	1,842	29	965	52
1989	6934	2792	40	1,870	27	532	28	1,593	23	519	33	1,143	16	649	57	2,328	34	1,092	47
1990	7083	2896	41	2,444	35	618	25	1,554	22	505	32	1,179	17	696	59	1,906	27	1,077	57
50–59	21,317	3,723	17	6,753	32	704	10	5,791	27	851	15	4,846	23	1,483	31	3,927	18	684	17
60–69	46,380	8,710	19	14,732	32	1,368	9	13,157	28	2,540	19	8,664	19	2,625	30	9,827	21	2,177	22
70–79	87,257	24,326	28	25,430	29	3,541	14	22,602	26	4,922	22	18,926	22	7,745	41	20,299	23	8,118	40
80–89	71,322	26,890	38	23,043	32	5,537	24	17,360	24	5,275	30	11,139	16	6,075	55	19,780	28	10,003	51
Total	233,359	66,545	29	72,402	31	11,768	16	60,464	26	14,093	23	44,754	19	18,824	42	55,739	24	22,059	40

SOURCE: Earned Degrees Conferred Series, 1950–90, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 9-4

SOCIAL SCIENCES BACHELORS DEGREES BY SUBFIELD AND SEX, 1950–1989

	Total Social Sciences			Economics				Political Science				Sociology				Other			
Year	No.	Women	%W	No.	%E	Wom	%W	No.	%PS	Wom	%W	No.	%S	Wom	%W	No.	%C	Wom	%W
1950	29,887	6,405	21	14573	49	1102	8	6346	21	980	15	7887	26	4039	51	1081	4	284	26
1951	24,345	5,950	24	10484	43	905	9	5582	23	884	16	7320	30	3925	54	959	4	236	25
1952	21,143	5,941	28	8595	41	1075	13	4925	23	909	18	6697	32	3711	55	926	4	246	27
1953	19,362	5,389	28	7313	38	768	11	5086	26	974	19	6102	32	3447	56	861	4	200	23
1954	18,735	5,386	29	6728	36	790	12	5332	28	1018	19	5702	30	3315	58	973	5	263	27
1955	18,303	5,251	29	6364	35	686	11	5500	30	1085	20	5533	30	3200	58	906	5	280	31
1956	19,521	5,435	28	6584	34	676	10	5670	29	1109	20	5916	30	3363	57	1351	7	287	21
1957	20,724	5,635	27	6878	33	664	10	5874	28	1109	19	6383	31	3531	55	1589	8	331	21
1958	22,120	5,635	25	7514	34	605	8	6167	28	1136	18	6583	30	3606	55	1856	8	288	16
1959	22,945	5,892	26	7723	34	644	8	6387	28	1164	18	6877	30	3750	55	1958	9	334	17
1960	23,383	6,259	27	7488	32	672	9	6657	28	1256	19	7182	31	4011	56	2056	9	320	16
1961	24,743	6,556	26	7939	32	626	8	7149	29	1445	20	7519	30	4108	55	2136	9	377	18
1962	27,392	7,668	28	8405	31	760	9	8390	31	1909	23	8183	30	4554	56	2414	9	445	18
1963	31,246	9,042	29	9399	30	914	10	10136	32	2303	23	9055	29	5270	58	2654	8	555	21
1964	36,961	11,140	30	10607	29	1068	10	12206	33	2738	22	11053	30	6587	60	3095	8	747	24
1965	40,994	12,779	31	10895	27	1039	10	13693	33	3038	22	12896	31	7773	60	3510	9	929	26
1966	46,624	14,906	35	12,274	28	1,144	9	15,597	28	3,431	28	15,203	35	9,064	60	3,550	8	1,267	36
1967	53,685	17,397	35	13,829	28	1,338	10	17,985	28	3,989	29	17,751	36	10,588	60	4,120	8	1,482	36
1968	64,103	21,565	36	16,207	27	1,638	10	20,823	27	4,529	28	22,062	37	13,485	61	5,011	8	1,913	38
1969	75,173	25,609	37	17,909	26	1,814	10	24,189	27	5,022	26	26,555	38	16,213	61	6,520	9	2,560	39
1970	82,950	28,488	37	18,325	24	1,889	10	26,099	27	5,207	25	30,848	40	18,403	60	7,678	10	2,989	39
1971	87,319	30,959	38	17,137	21	1,923	11	27,636	27	5,564	25	33,667	41	19,961	59	8,879	11	3,511	40
1972	90,185	31,390	37	16,408	19	1,830	11	28,319	27	5,338	23	35,630	42	20,296	57	9,828	12	3,926	40
1973	92,483	32,597	38	15,848	18	2,076	13	30,246	28	5,919	24	35,996	42	20,249	56	10,393	12	4,353	42
1974	93,193	33,589	39	15,596	18	2,158	14	30,932	28	6,199	25	35,915	41	20,590	57	10,750	12	4,642	43
1975	86,428	32,074	40	15,160	19	2,483	16	29,314	28	6,610	29	31,858	40	18,511	58	10,096	13	4,470	44
1976	82,088	31,172	42	16,025	21	2,993	19	28,515	28	7,205	34	27,992	37	16,601	59	9,556	13	4,373	46
1977	77,349	30,617	44	16,674	24	3,647	22	26,576	27	7,497	39	25,008	36	15,194	61	9,091	13	4,279	47
1978	75,461	30,972	46	17,443	26	4,110	24	26,245	27	8,168	45	23,073	34	14,612	63	8,700	13	4,082	47
1979	72,775	30,754	48	18,150	28	4,767	26	25,817	27	8,620	50	20,546	32	13,390	65	8,262	13	3,977	48
1980	72,266	31,543	50	19,736	31	5,712	29	25,658	26	9,212	56	19,181	30	12,790	67	7,691	12	3,829	50
1981	70,768	31,218	51	20,700	34	6,050	29	25,217	26	9,271	58	17,592	29	12,231	70	7,259	12	3,666	51
1982	71,236	31,603	51	21,880	36	6,843	31	25,885	26	9,859	62	16,333	27	11,444	70	7,138	12	3,457	48
1983	69,477	30,785	52	22,410	38	7,247	32	26,020	27	10,228	65	14,347	24	9,984	70	6,700	11	3,326	50
1984	68,611	29,826	51	22,874	39	7,515	33	25,943	27	10,165	64	13,347	23	9,054	68	6,447	11	3,092	48
1985	67,584	29,387	51	23,073	40	7,673	33	26,065	28	10,300	65	12,165	21	8,398	69	6,281	11	3,016	48
1986	69,042	29,994	51	23,796	41	7,954	33	26,661	28	10,580	66	12,397	21	8,535	69	6,188	11	2,925	47
1987	68,119	30,069	53	22,419	39	7,618	34	26,999	28	10,919	68	12,359	22	8,462	68	6,342	11	3,070	48
1988	69,861	30,660	52	22,997	39	7,537	33	27,333	28	10,964	67	13,085	22	8,999	69	6,446	9	3,160	49
1989	74,625	33,514	45	23,502	31	7,631	32	30,348	41	12,411	41	14,329	19	9,866	69	6,446	9	3,606	56
1990	82,104	36,002	44	25,535	31	7,857	31	33,235	40	13,549	41	15,929	19	10,901	68	7,405	9	3,695	50
50–59	217,085	56,919	26	82,756	38	7,915	10	56,899	26	10,368	18	65,000	30	35,887	55	12,460	6	2,749	22
60–69	407,333	132,921	33	114,952	28	11,013	10	119,856	29	29,660	25	137,459	34	81,853	59	35,066	9	10,395	30
70–79	773,902	312,612	40	166,768	22	27,878	17	213,370	28	66,327	31	300,533	39	177,807	59	93,233	12	40,602	44
80–89	701,589	306,599	44	223,367	32	71,780	32	266,129	38	103,909	39	145,135	21	99,763	69	66,938	10	33,147	50
Total	2,182,013	847,053	39	613,396	28	128,441	21	699,459	32	223,813	32	664,056	30	408,011	61	215,102	10	90,788	42

SOURCE: Series of Earned Degrees Conferred, 1969–90, National Center for Education Statistics

TABLE 9-5

SOCIAL WORK DEGREES BY LEVEL OF DEGREE AND SEX, 1970–71 – 1989–90

YEAR	BACHELORS			MASTERS			DOCTORATES		
	Total	Women	%Wom	Total	Women	%Wom	Total	Women	%Wom
1970–71	4,690	3,538	75.4	6,148	3,710	60.3	126	39	31.0
1971–72	6,223	4,661	74.9	6,656	4,049	60.8	99	31	31.3
1972–73	8,182	6,035	73.8	6,896	4,353	63.1	111	29	26.1
1973–74	9,960	7,115	71.4	7,974	4,965	62.3	109	33	30.3
1974–75	10,784	8,049	74.6	8,852	5,527	62.4	135	48	35.6
1975–76	11,032	8,350	75.7	9,002	6,012	66.8	163	73	44.8
1976–77	11,673	9,035	77.4	9,596	6,549	68.2	131	55	42.0
1977–78	12,672	9,947	78.5	9,986	6,998	70.1	138	66	47.8
1978–79	13,182	10,608	80.5	9,893	7,025	71.0	136	61	44.9
1979–80	12,870	10,503	81.6	10,158	7,326	72.1	162	81	50.0
1980–81	12,410	10,303	83.0	10,240	7,626	74.5	193	104	53.9
1981–82	11,813	9,946	84.2	9,959	7,664	77.0	198	108	54.5
1982–83	11,445	9,647	84.3	9,456	7,487	79.2	215	124	57.7
1983–84	8,824	7,576	85.9	8,547	6,788	79.4	227	132	58.1
1984–85	8,063	6,899	85.6	8,900	7,183	80.7	244	154	63.1
1985–86	7,428	6,359	85.6	8,310	6,650	80.0	208	131	63.0
1986–87	8,368	7,170	85.7	9,442	7,662	81.1	203	117	57.6
1987–88	8,471	7,304	86.2	9,344	7,608	81.4	226	137	60.6
1988–89	9,189	7,813	85.0	10,013	8,145	81.3	195	127	65.1
1989–90	9,063	8,725	96.3	9,702	7,926	81.7	260	182	70.0
TOTALS	196,342	159,583	81.3	179,074	131,253	73.3	3,479	1,832	52.7

Q9–06. 4–5–92

SOURCE: Foreign Participation in U.S. Science and Engineering Education and Labor Markets, Special Report, NSF 81–316, National Science Foundation; and 1980–90 Summary Report, Doctoral Recipients from United States Universities, National Research Council

TABLE 9-6

SOCIAL AND BEHAVIORAL SCIENCES PhD RECIPIENTS BY CITIZENSHIP AND VISA TYPE, 1960 – 1990

YEAR	TOTAL	U.S.		FOREIGN						Citizenship Unknown
				Total		Immigrant		Non–Imm		
		No.	%	No.	%	No.	%	No.	%	
1960	1,710	1,488	87.0	204	11.9	51	3.0	153	8.9	18
1961	1,810	1,574	87.0	204	11.3	38	2.1	166	9.2	32
1962	1,925	1,647	85.6	240	12.5	30	1.6	210	10.9	38
1963	2,035	1,759	86.4	230	11.3	59	2.9	171	8.4	46
1964	2,299	1,951	84.9	283	12.3	70	3.0	213	9.3	65
1965	2,379	2,028	85.2	315	13.2	75	3.2	240	10.1	36
1966	2,697	2,266	84.0	361	13.4	80	3.0	281	10.4	70
1967	3,160	2,666	84.4	414	13.1	126	4.0	288	9.1	80
1978	3,534	3,029	85.7	433	12.3	122	3.5	311	8.8	72
1969	4,035	3,452	85.6	504	12.5	152	3.8	352	8.7	79
1970	4,616	3,926	85.1	634	13.7	204	4.4	430	9.3	56
1971	5,285	4,503	85.2	718	13.6	242	4.6	476	9.0	64
1972	5,621	4,738	84.3	771	13.7	265	4.7	506	9.0	112
1973	5,945	4,986	83.9	846	14.2	258	4.3	588	9.9	113
1874	6,017	4,919	81.8	815	13.5	226	3.8	589	9.8	283
1975	6,209	5,253	84.6	839	13.5	228	3.7	611	9.8	117
1976	6,373	5,434	85.3	834	13.1	195	3.1	639	10.0	105
1977	6,365	5,340	83.9	805	12.6	203	3.2	602	9.5	220
1978	6,057	5,033	83.1	735	12.1	202	3.3	533	8.8	289
1979	5,943	4,957	83.4	736	12.4	179	3.0	557	9.4	250
1980	6,253	5,298	84.7	726	11.6	200	3.2	526	8.4	231
1981	6,505	5,463	84.0	772	11.9	200	3.1	572	8.8	270
1982	6,250	5,112	81.8	788	12.6	201	3.2	587	9.4	350
1983	6,055	5,020	82.9	757	12.5	187	3.1	570	9.4	278
1984	5,895	4,750	80.6	828	14.0	194	3.3	634	10.8	317
1985	5,720	4,536	79.3	875	15.3	212	3.7	663	11.6	309
1986	5,841	4,550	77.9	894	15.3	222	3.8	672	11.5	397
1987	5,718	4,351	76.1	892	15.6	242	4.2	650	11.4	475
1988	5,769	4,315	74.8	928	16.1	221	3.8	707	12.3	526
1989	5,955	4,192	70.4	1,036	17.4	225	3.8	811	13.6	727
1990	6,076	4,484	73.8	1,096	18.0	237	3.9	859	14.1	496
TOTAL	150,952	123,918	82.0	20,513	13.7	5,346	3.6	15,167	10.1	6,521

FIELD: Social Sciences

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 9-7

PhD DEGREES IN SELECTED SOCIAL SCIENCES BY CITIZENSHIP & RACE/ETHNICITY 1973–91

Field & Year	Total*	Non–Cit Temp Visas	%T	Citizens and Permament Visa Non–Citizens														Other/ Unkn.
				Total U.S.	Amer. Ind. No.	%US	Asian No.	%US	Black No.	%US	White No.	%US	Hispanic No.	%US				
ANTHROPOLOGY																		
1973–76	1,518	137	9.0	1,381	9	0.7	17	1.2	26	1.9	1,149	83.2	15	1.1	165			
1977–80	1,537	101	6.6	1,397	13	0.9	27	1.9	24	1.7	1,204	86.2	23	1.6	106			
1981–84	1410	107	7.6	1,248	5	0.4	15	1.2	31	2.5	1114	89.3	28	2.2	55			
1985	353	23	6.5	316	3	0.9	12	3.8	10	3.2	260	82.3	15	4.7	16			
1986	381	29	7.6	329	2	0.6	5	1.5	4	1.2	295	89.7	14	4.3	9			
1987	352	21	6.0	304	1	0.3	12	3.9	9	3.0	255	83.9	13	4.3	14			
1988	325	28	8.6	276	2	0.7	7	2.5	6	2.2	240	87.0	13	4.7	8			
1989	324	31	9.6	264	1	0.4	4	1.5	6	2.3	234	88.6	8	3.0	11			
1990	324	31	9.6	275	1	0.4	8	2.9	3	1.1	249	90.5	12	4.4	2			
1991	340	36	10.6	293	1	0.3	8	2.7	5	1.7	264	90.1	9	3.1	6			
TOTALS	6,864	544	7.9	6,083	38	0.6	115	1.9	124	2.0	5,264	86.5	150	2.5	392			
SOCIOLOGY																		
1973–76	2,658	255	9.6	2,403	8	0.3	46	1.9	97	4.0	1,924	80.1	22	0.9	306			
1977–80	2,569	245	9.5	2,278	20	0.9	66	2.9	116	5.1	1,910	83.8	57	2.5	109			
1981–84	2211	249	11.3	1,884	3	0.2	58	3.1	108	5.7	1608	85.4	61	3.2	46			
1985	461	60	13.0	380	0	0.0	8	2.1	26	6.8	323	85.0	17	4.5	6			
1986	492	68	13.8	396	4	1.0	11	2.8	25	6.3	330	83.3	14	3.5	12			
1987	423	54	12.8	334	2	0.6	18	5.4	12	3.6	284	85.0	10	3.0	8			
1988	449	68	15.1	342	2	0.6	13	3.8	22	6.4	282	82.5	16	4.7	7			
1989	435	92	21.1	306	1	0.3	13	4.2	26	8.5	240	78.4	22	7.2	4			
1990	427	93	21.8	315	1	0.3	15	4.8	20	6.3	249	79.0	27	8.6	3			
1991	466	101	21.7	348	2	0.6	17	4.9	26	7.5	272	78.2	23	6.6	8			
TOTALS	10,591	1,285	12.1	8,986	43	0.5	265	2.9	478	5.3	7,422	82.6	269	3.0	509			
ECONOMICS																		
1973–76	3,461	816	23.6	2,645	8	0.3	90	3.4	30	1.1	2,214	83.7	16	0.6	287			
1977–80	3,112	761	24.5	2,263	7	0.3	119	5.3	47	2.1	1,911	84.4	33	1.5	146			
1981–84	3102	838	27.0	2,111	3	0.1	136	6.4	69	3.3	1781	84.4	44	2.1	78			
1985	785	269	34.3	481	2	0.4	26	5.4	14	2.9	405	84.2	14	2.9	20			
1986	836	260	31.1	519	2	0.4	28	5.4	15	2.9	450	86.7	6	1.2	18			
1987	798	249	31.2	482	0	0.0	42	8.7	14	2.9	402	83.4	13	2.7	11			
1988	827	290	35.1	473	0	0.0	47	9.9	15	3.2	390	82.5	12	2.5	9			
1989	872	290	33.3	470	1	0.2	35	7.4	11	2.3	400	85.1	12	2.6	11			
1990	836	332	39.7	440	1	0.2	30	6.8	19	4.3	368	83.6	14	3.2	8			
1991	853	401	47.0	413	1	0.2	34	8.2	23	5.6	331	80.1	12	2.9	12			
TOTALS	15,482	4,506	29.1	10,297	25	0.2	587	5.7	257	2.5	8,652	84.0	176	1.7	600			
POLITICAL SCIENCE																		
1973–76	628	88	14.0	540	3	0.6	9	1.7	14	2.6	477	88.3	8	1.5	29			
1977–80	2,243	227	10.1	1,943	6	0.3	48	2.5	100	5.1	1,639	84.4	37	1.9	113			
1981–84	1720	252	14.7	1,395	2	0.1	46	3.3	87	6.2	1148	82.3	39	2.8	73			
1985	407	79	19.4	292	1	0.3	10	3.4	22	7.5	236	80.8	6	2.1	17			
1986	414	72	17.4	295	0	0.0	11	3.7	17	5.8	246	83.4	11	3.7	10			
1987	405	77	19.0	287	0	0.0	9	3.1	18	6.3	243	84.7	10	3.5	7			
1988	391	82	21.0	253	0	0.0	6	2.4	16	6.3	215	85.0	6	2.4	10			
1989	432	90	20.8	288	1	0.3	16	5.6	17	5.9	243	84.4	5	1.7	6			
1990	462	85	18.4	337	1	0.3	10	3.0	23	6.8	279	82.8	16	4.7	8			
1991	434	98	22.6	313	2	0.6	13	4.2	16	5.1	264	84.3	12	3.8	6			
TOTALS	7,536	1,150	15.3	5,943	16	0.3	178	3.0	330	5.6	4,990	84.0	150	2.5	279			

* Includes individuals who did not report their citizenship at time of doctorate

Source: Science and Engineering Degrees: 1966–88, a source book, National Science Foundation, NSF 90–312 and NCES Survey of Earned Degrees, 1990

TABLE 9-8

PSYCHOLOGY DEGREES BY LEVEL AND SEX, 1966 – 1990

Year	Bachelors			Masters			Doctorates		
	Total	Women	%W	Total	Women	%W	Total	Wom	%W
1966	17,022	6,981	41.0	2,530	850	33.6	1,139	245	21.5
1967	19,496	7,806	40.0	3,138	1,062	33.8	1,295	265	20.5
1968	23,972	10,144	42.3	3,482	1,159	33.3	1,464	333	22.7
1969	29,495	12,719	43.1	4,013	1,327	33.1	1,766	416	23.6
1970	33,854	14,741	43.5	4,120	1,566	38.0	1,890	444	23.5
1971	38,154	17,037	44.7	4,438	1,651	37.2	2,145	530	24.7
1972	43,421	20,154	46.4	5,293	2,033	38.4	2,279	609	26.7
1973	48,096	22,986	47.8	5,882	2,367	40.2	2,458	717	29.2
1974	52,256	26,407	50.5	6,616	2,630	39.8	2,598	801	30.8
1975	51,436	27,103	52.7	7,104	3,045	42.9	2,751	873	31.7
1976	50,363	27,376	54.4	7,859	3,671	46.7	2,883	946	32.8
1977	47,794	27,102	56.7	8,320	4,004	48.1	2,990	1,088	36.4
1978	45,057	26,540	58.9	8,194	4,263	52.0	3,055	1,127	36.9
1979	43,012	26,363	61.3	8,031	4,343	54.1	3,091	1,260	40.8
1980	42,513	26,923	63.3	7,861	4,464	56.8	3,098	1,311	42.3
1981	41,364	26,917	65.1	8,039	4,668	58.1	3,358	1,473	43.9
1982	41,539	27,783	66.9	7,849	4,621	58.9	3,159	1,438	45.5
1983	40,825	27,597	67.6	8,439	5,185	61.4	3,347	1,597	47.7
1984	40,375	27,426	67.9	8,073	5,093	63.1	3,257	1,631	50.1
1985	40,237	27,422	68.2	8,481	5,417	63.9	3,117	1,541	49.4
1986	40,937	28,246	69.0	8,363	5,426	64.9	3,124	1,598	51.2
1987	43,195	29,796	69.0	8,165	5,327	65.2	3,177	1,699	53.5
1988	45,378	31,794	70.1	7,925	5,326	67.2	3,058	1,675	54.8
1989	48,516	34,335	70.8	8,579	5,780	67.4	3,263	1,834	56.2
1990	53,586	38,295	71.5	9,231	6,239	67.6	3,353	1,939	57.8
66–75	357,202	166,078	46.5	46,616	17,690	37.9	19,785	5,233	26.4
76–85	433,079	271,449	62.7	81,146	45,729	56.4	31,355	13,412	42.8
86–90	588,814	328,544	55.8	88,879	45,788	51.5	35,760	13,978	39.1
Total	1,379,095	766,071	55.5	216,641	109,207	50.4	86,900	32,623	37.5

Note: PhD data are from the Survey of Earned Doctorates. BA and MA data are from the National Center for Education Statistics' Earned Degrees and Completions Survey

FIELD: Psychology

Source: 1989–90 & 1990–91 Survey of Graduate Departments of Psychology, American Psychological Association and Council of Graduate Departments of Psychology.

TABLE 9-9

FACULTY IN GRADUATE DEPARTMENTS OF PSYCHOLOGY BY SEX, RACE/ETHNICITY AND TENURE STATUS, 1989–90

	DOCTORAL							
	Total	Men	Wom	%W	Ten–ured	Tenure, Track	Non Ten–ure Track	Total
Total	5323	3973	1350	25	3891	1174	224	5289
White	5004	95	90	24	96	88	89	4976
Black	159	2	6	49	2	7	7	155
Hispanic	63	1	2	35	<1	2	3	62
Asian	84	2	2	31	1	3	1	83
Nat. Amer.	13	<1	<1	39	<1	<1	0	13
	MASTERS							
	Total	Men	Wom	%W	Ten–ured	Tenure Track	Non Ten–ure Track	Total
Total	1626	1181	445	27	1194	342	83	1619
White	1519	95	89	26	95	90	88	1514
Black	48	2	7	60	2	5	10	47
Hispanic	20	1	2	35	<1	2	1	19
Asian	36	2	3	31	2	2	1	36
Nat. Amer.	3	<1	<1	33	<1	0	0	3

Note: Except for row and column totals, all numbers are percents. The Tenure totals are less than the Faculty totals due to under reporting of tenure status.

TABLE 9-10

RANK AND TENURE STATUS OF FULL–TIME FACULTY IN GRADUATE DEPARTMENTS OF PSYCHOLOBY BY SEX AND RACE/ETHNICITY, 1990–91

	Men		Women		White		Mimority	
Number/Percent	5137	72.6%	1939	27.4%	6627	93.7%	421	5.9%
Rank								
Professor		57		26		50		25
Assoc. Professor		25		31		26		30
Assistant Prof.		16		38		21		41
Lecturer/Instructor		1		3		1		2
Not Specified		1		2		1		3
Tenure Status								
Tenured		78		50		72		46
On Tenure Track		18		40		23		44
Not On Tenure Track		2		6		4		3
Not Specified		2		3		1		7

SOURCE: The American Political Science Association 1989–90 Survey of Departments

TABLE 9-11

POLITICAL SCIENCE FULL–TIME FACULTY BY RANK, TENURE STATUS AND SEX AND RACE/ETHNICITY, 1989–90

	Tenure and non–Tenure		Total Tenure–Track		Professors		Associate Professors		Assistant Professors		Instructors & Lecturers		Non–tenure Track Faculty		Part–Time
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Total	6372	100	5725	100	2640	100	1644	100	1303	100	138	100	647	100	558
Men	5357	84.1	4858	84.9	2439	92.4	1378	83.8	937	71.9	104	75.4	499	77.1	406
Women	1015	15.9	867	15.1	201	7.6	266	16.2	366	28.1	34	24.6	148	22.9	153
Black	244	3.8	211	3.7	58	2.2	56	3.4	89	6.8	8	5.8	33	5.1	27
Men	194	79.5	168	79.6	52	89.7	42	75.0	68	76.4	6	75.0	26	78.8	19
Women	50	20.5	43	20.4	6	10.3	14	25.0	21	23.6	2	25.0	7	21.2	8
Hispanic	109	1.7	97	1.7	31	1.2	28	1.7	32	2.5	6	4.3	12	1.9	14
Men	87	79.8	77	79.4	29	93.5	21	75.0	23	71.9	4	66.7	10	83.3	8
Women	22	20.2	20	20.6	2	6.5	7	25.0	9	28.1	2	33.3	2	16.7	6
Others (All ranks and tenure status combined)															
Asian	262														34
Men	219														20
Women	43														14
Indian	5														1
Men	5														1
Women	0														0
Res. Alien	214														51
Men	179														41
Women	35														10

Source: Affirmative Action: Women and Minorities in the Profession, American Political Asso News, March 1992

TABLE 9-12

POLITICAL SCIENCE WOMEN AND MINORITY FACULTY, 1985 – 1991

	All	Women	%Wom	African Amer.	%AfAm	Latino	%Lat	Asian	%A	Native Amer	%NA
All Faculty (Full– and Part–Time)											
1985	9,878	1,422	14.4	350	3.5	143	1.4				
1986	9,896	1,458	14.7	391	4.0	142	1.4				
1987	9,905	1,458	14.7	436	4.4	143	1.4				
1988	11,042	1,922	17.4	443	4.0	183	1.7				
1989	11,350	1,927	17.0	516	4.5	193	1.7				
1990	11,592	2,170	18.7	525	4.5	207	1.8				
1991	11,875	2,231	18.8	544	4.6	220	1.9	445	3.7	14	0.1
Full–Time Faculty											
1985	7,992	1,031	12.9	277	3.5	104	1.3				
1986	8,126	1,049	12.9	308	3.8	111	1.4				
1987	8,126	1,086	13.4	308	3.8	126	1.6				
1988	8,571	1,298	15.1	350	4.1	136	1.6				
1989	8,791	1,305	14.8	359	4.1	138	1.6				
1990	8,932	1,486	16.6	365	4.1	156	1.7				
1991	9,260	1,517	16.4	379	4.1	165	1.8				
Faculty Holding Tenured Positions in Ph.D. Programs											
1985	1,941	148	7.6	41	2.1	19	1.0				
1986	1,979	153	7.7	33	1.7	21	1.1				
1987	2,011	157	7.8	35	1.7	21	1.0				
1988	2,017	173	8.6	34	1.7	21	1.0				
1989	2,084	186	8.9	35	1.7	24	1.2				
1990	2,084	213	10.2	36	1.7	28	1.3				
1991	2,177	215	9.9	51	2.3	28	1.3				

Source: Affirmative Action: Women and Minorities in the Profession, American Political Science Association News, March, 1992

TABLE 9-13

POLITICAL SCIENCE Ph.D. WOMEN AND MINORITY STUDENTS AND GRADUATES, 1980 – 1991

School Year Ending	Ph.D. Student Degrees & Admissions: Avg. No. Graduated Last 3 Years	No. Now Now in Program	No. Applying to Enter in Fall	No. Accepted and Starting	Women, African American, and Latino Students: Total Ph.D.s in Last 3 Years: Women	African Amer	Latino	No. Now in Ph.D. Program: Women	African Amer	Latino	No. Starting Ph.D. in Fall: Women	African Amer	Latino	No. of Foreign Students Now in Ph.D. Program
1980	735	5,795	5,236	1,071	346	143		1,397	424		319	107		1,187
1981	712	5,756	4,982	1,094	369	130		1,415	384		346	110		1,238
1982	628	5,492	5,531	1,011	365	101		1,347	330		312	76		1,242
1983	638	5,273	5,187	1,019	361	97		1,371	306		308	72		1,271
1984	647	5,054	4,893	1,026	357	94		1,394	283		303	68		1,301
1985	614	5,495	5,809	996	339	87		1,440	297		277	54		1,456
1986	613	5,882	5,934	1,121	430	117		1,643	350		344	64		1,369
1987	506	5,501	7,215	1,095	381	91		1,530	267		297	46		1,499
1988	591	5,984	8,170	1,154	419	96		1,684	256		368	56		1,658
1989	571	6,542	9,013	1,384	436	81		1,859	303		429	85		1,853
1990	575	6,826	9,392	1,309	381	78		2,022	337		428	67		1,684
1991	554	6,453	11,243	1,315	399	86	33	1,973	300	215	415	71	74	1,516

Q9–9B, 3–27–91
SOURCE: The American Political Science Association 1989–90 Survey of Departments

TABLE 9-14

POLITICAL SCIENCE GRADUATE ENROLLMENT AND DEGREES BY LEVEL, SEX, RACE AND CITIZENSHIP, 1989–90

	1st Year Enrollment		Students Now in Program		Degrees Granted Last 3 Years		1st Year Foreign Students	
	No.	%	No.	%	No.	%	No.	%
Ph.D. Programs								
Total	1230	100.0	6412	100.0	1581	100.0	1569	24.5
Women	402	32.7	1899	29.6	346	21.9		
Black	60	4.9	306	4.8	68	4.3		
Masters Programs								
Total	3435	100.0	10901	100.0	8652	100.0	1217	11.2
Women	1402	40.8	4347	39.9	3002	34.7		
Black	285	23.2	911	14.2	576	36.4		

SOURCE: Office of Personnel Management, unpublished tabulations

TABLE 9-15

FEDERAL WORKERS EMPLOYED IN THE SOCIAL SCIENCES, PSYCHOLOGY AND WELFARE BY OCCUPATION TITLE, SEX AND MINORITY STATUS, SEPTEMBER 30, 1991

	ALL EMPLOYEES			TOTAL MINORITY				BLACK		HISPANIC		ASIAN		AM. INDIAN		WHITE	
OCCUPATIONAL TITLE	TOTAL	WOMEN	% W	TOTAL	%	WOM	% W	No.	% B	No.	% H	No.	% A	No.	% I	No.	% W
Social Science	4,731	2,147	45.4	1,221	25.8	632	51.8	807	17.1	207	4.4	62	1.3	145	3.1	3510	74.2
Economist	5,968	1,511	25.3	659	11.0	260	39.5	322	5.4	127	2.1	196	3.3	14	0.2	5309	89.0
Foreign Affairs	4,152	1,066	25.7	455	11.0	158	34.7	203	4.9	134	3.2	102	2.5	16	0.4	3697	89.0
International Relations	106	28	26.4	11	10.4	3	27.3	5	4.7	5	4.7	1	0.9	0	0.0	95	89.6
Foreign Agricultural Affairs	201	27	13.4	15	7.5	4	26.7	8	4.0	1	0.5	4	2.0	2	1.0	186	92.5
Manpower Res. & Analysis	41	15	36.6	9	22.0	3	33.3	7	17.1	0	0.0	1	2.4	1	2.4	32	78.0
Geography	304	91	29.9	18	5.9	10	55.6	9	3.0	1	0.3	5	1.6	3	1.0	286	94.1
History	713	185	25.9	35	4.9	13	37.1	18	2.5	12	1.7	4	0.6	1	0.1	678	95.1
Psychology	4,461	1,468	32.9	369	8.3	169	45.8	176	3.9	106	2.4	52	1.2	35	0.8	4092	91.7
Sociology	95	48	50.5	6	6.3	5	83.3	4	4.2	0	0.0	2	2.1	0	0.0	89	93.7
Social Work	4,996	2,730	54.6	1,324	26.5	826	62.4	836	16.7	236	4.7	86	1.7	166	3.3	3672	73.5
General Anthropology	73	22	30.1	6	8.2	4	66.7	2	2.7	2	1.0	1	1.4	1	1.4	67	91.8
Archeology	1,037	384	37.0	62	6.0	20	32.3	2	0.2	18	1.7	5	0.5	37	3.6	975	94.0
TOTALS	26,878	9,722	36.2	4,190	15.6	2107	50.3	2399	8.9	849	3.2	521	1.9	421	1.6	22688	84.4

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 10-1

PhD AWARDS IN THE ARTS AND HUMANITIES BY SUBFIELD AND SEX, 1973 – 1991

	1973–82			1983–88			1989			1990			1991		
	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W	Total	Wom	%W
HUMANITIES TOTAL	44,548	16,083	36.1	20,968	9,318	36.1	3,558	1,618	45.5	3,820	1,741	45.6	4,094	1,904	46.5
Hist, Am, Euro, Gen.& Oth(1)	5,480	1,066	19.5												
History, American (1)	1,403	328	23.4	1240	416	33.5	206	66	32.0	212	65	30.7	250	102	40.8
History, European (1)	949	273	28.8	830	296	35.7	107	36	33.6	151	47	31.1	126	52	41.3
History of Science (2)	283	107	37.8	131	50	38.2	19	9	47.4	26	9	34.6	27	11	40.7
History, Gen. & Other (1,3)	1,328	356	26.8	1327	424	32.0	203	70	34.5	222	80	36.0	255	83	32.5
Classics (4)	704	244	34.7	307	120	39.1	51	18	35.3	59	29	49.2	55	23	41.8
Comparative Literature (5)	876	497	56.7	751	448	59.7	103	43	41.7	97	62	63.9	150	85	56.7
Linguistics	1,788	728	40.7	1055	545	51.7	188	106	56.4	167	89	53.3	227	110	48.5
Speech & Debate (6)	931	282	30.3	230	97	42.2	35	18	51.4	38	19	50.0	85	35	41.2
Letters, General (7)				90	52	57.8	13	2	15.4	19	13	68.4	17	6	35.3
Letters, Other (7)				195	108	55.4	59	37	62.7	52	30	57.7	44	26	59.1
American Studies (8)	586	243	41.5	474	240	50.6	76	48	63.2	72	37	51.4	92	56	60.9
Archeology	250	116	46.4	167	87	52.1	27	15	55.6	22	12	54.5	33	20	60.6
Art, Fine & Applied (9)	20	4	20.0												
Art History & Criticism (9)	1,434	838	58.4	829	576	69.5	145	100	69.0	135	98	72.6	125	79	63.2
Music	3,824	976	25.5	2761	888	32.2	528	175	33.1	571	200	35.0	584	225	38.5
Philosophy	3,557	582	16.4	1399	306	21.9	271	67	24.7	243	59	24.3	285	79	27.7
Religion (10)	1,591	429	27.0	1109	233	21.0	215	41	19.1	218	45	20.6	183	42	23.0
Theater (11)	386	154	39.9	561	241	43.0	79	39	49.4	106	51	48.1	90	43	47.8
LANGUAGE & LITERATURE	19158	8860	46.2	7512	4191	55.8	1151	684	59.4	1308	746	57.0	1351	782	57.9
Amer, & Eng. Lang. & Lit. (12)															
American (12)	2,157	898	41.6	1156	609	52.7	193	104	53.9	229	126	55.0	253	142	56.1
English (12)	8,682	3,867	44.5	3126	1770	56.6	528	316	59.8	567	318	56.1	600	341	56.8
French (13)	2,057	1,327	64.5	620	445	71.8	105	81	77.1	123	81	65.9	99	67	67.7
German (13)	1,328	658	49.5	451	247	54.8	73	45	61.6	78	45	57.7	71	38	53.5
Italian (13)	203	86	42.4	102	57	55.9	20	11	55.0	25	15	60.0	31	17	54.8
Spanish (14)	2,012	965	48.0	842	508	60.3	133	84	63.2	173	108	62.4	172	111	64.5
Russian (13)	571	224	39.2	145	73	50.3	13	5	38.5	19	15	78.9	25	13	52.0
Slavic (13)				48	23	47.9	7	4	57.1	7	3	42.9	14	9	64.3
Chinese (15)				81	34	42.0	9	4	44.4	16	7	43.8	19	9	47.4
Japanese (15)				54	31	57.4	13	7	53.8	9	6	66.7	7	4	57.1
Hebrew (15)				68	19	27.9	11	5	45.5	14	4	28.6	11	3	27.3
Arabic (15)				52	11	21.2	6	2	33.3	7	3	42.9	4	1	25.0
Other Languages (13)	1,039	346	33.3	287	118	41.1	40	16	40.0	41	15	36.6	45	27	60.0
Humanities, General (16)	225	101	44.9	136	66	48.5	20	9	45.0	28	16	57.1	29	16	55.2
Humanities, Other	884	388	43.9	344	180	52.3	62	35	56.5	74	34	45.9	86	29	33.7

(1) Separated into "History, American, European," and "History, Other" in 1978. (2) Added in 1970 as "History and Philosophy of Science." Renamed "History of Science" in 1984. (3) "History, Other" combined with "History, General" in 1983. (4) Name changed from "Foreign Language & Lit., Classical" in 1966 and renamed "Classics" in 1983. (5) Added in 1976. (6) Originally named "Speach as a Dramatic Art." in 1962. "Dramatic Arts was added. (7) Added in 1983. (8) Added in 1973. (9) In 1968, "Art, Fine & Applied: was broken out into "Art, Applied" & "Art, History & Criticism." (10) Added in 1973. (11) Added in 1978 as "Theater and Theater Criticism." Renamed "Theater" in 1983. (12) This group was separated in 1968. (13) Called "Modern Foreign Language, Unspecified" until 1965, "Other Languages" in 1979, and separated in 1983. (14) "Spanish and Portuguese" prior to 1983. (15) Separated from "Other Languages" in 1983.

FIELD: Linguistics

SOURCE: Earned Degrees Conferred Series, 1969–89, National Center for Education Statistics, redefined by the National Science Foundation.

TABLE 10-2

LINGUISTICS DEGREES BY SEX AND LEVEL OF DEGREE, 1955–56 THRU 1989–90

	BACHELORS			MASTERS			DOCTORATES		
YEAR	Total	Women	%Wom	Total	Women	%Wom	Total	Women	%Wom
1970–71	254	171	67.3	352	179	50.9			
1971–72	296	186	62.8	373	199	53.4			
1972–73	442	290	65.6	452	228	50.4			
1973–74	431	315	73.1	455	248	54.5			
1974–75	434	305	70.3	506	279	55.1	152	70	46.1
1975–76	534	371	69.5	523	313	59.8	190	73	38.4
1976–77	564	399	70.7	552	326	59.1	175	65	37.1
1977–78	596	408	68.5	522	313	60.0	155	77	49.7
1978–79	585	408	69.7	503	297	59.0	182	75	41.2
1979–80	553	418	75.6	522	315	60.3	176	78	44.3
1980–81	551	408	74.0	498	307	61.6	191	90	47.1
1981–82	534	376	70.4	516	305	59.1	164	86	52.4
1982–83	472	355	75.2	597	357	59.8	160	82	51.3
1983–84	476	333	70.0	678	427	63.0	176	91	51.7
1984–85	490	350	71.4	633	409	64.6	189	96	50.8
1985–86	470	329	70.0	627	419	66.8	200	107	53.5
1986–87	474	334	70.5	541	346	64.0	166	83	50.0
1987–88	475	346	72.8	527	327	62.0	138	66	47.8
1988–89	442	309	69.9	579	368	63.6	165	94	57.0
1989–90	524	375	71.6	601	378	62.9	152	84	55.3
TOTALS	9,597	6,786	70.7	10,557	6,340	60.1	2,731	1,317	48.2

TABLE 10-3

EDUCATION DEGREES BY SEX AND LEVEL OF DEGREE, 1970–71 – 1989–90

	BACHELORS			MASTERS			DOCTORATES		
YEAR	Total	Women	%Wom	Total	Women	%Wom	Total	Women	%Wom
1970–71	177,638	132,236	74.4	89,067	50,020	56.2	6,398	1,355	21.2
1971–72	192,368	142,492	74.1	98,280	56,355	57.3	7,041	1,660	23.6
1972–73	195,640	142,816	73.0	105,646	61,450	58.2	7,314	1,813	24.8
1973–74	186,623	137,088	73.5	112,739	67,553	59.9	7,293	1,977	27.1
1974–75	168,749	123,703	73.3	120,233	74,733	62.2	7,443	2,296	30.8
1975–76	156,528	114,026	72.8	128,410	82,591	64.3	7,769	2,593	33.4
1976–77	143,658	103,740	72.2	126,375	83,201	65.8	7,955	2,769	34.8
1977–78	137,742	99,842	72.5	118,957	80,548	67.7	7,586	2,956	39.0
1978–79	127,853	93,568	73.2	111,834	76,734	68.6	7,731	3,263	42.2
1979–80	120,680	89,214	73.9	103,720	72,762	70.2	7,940	3,521	44.3
1980–81	108,265	81,196	75.0	98,381	70,301	71.5	7,900	3,736	47.3
1981–82	101,063	76,678	75.9	93,104	67,333	72.3	7,676	3,727	48.6
1982–83	97,991	74,321	75.8	84,853	61,621	72.6	7,551	3,787	50.2
1983–84	92,382	70,176	76.0	77,187	55,606	72.0	7,473	3,770	50.4
1984–85	88,161	66,897	75.9	76,137	55,192	72.5	7,151	3,723	52.1
1985–86	87,221	66,235	75.9	76,353	55,634	72.9	7,110	3,795	53.4
1986–87	87,115	66,345	76.2	75,501	55,859	74.0	6,909	3,792	54.9
1987–88	91,013	70,008	76.9	77,704	58,321	75.1	6,544	3,600	55.0
1988–89	96,988	75,326	77.7	82,238	61,952	75.3	6,783	3,889	57.3
1989–90	104,715	81,735	78.1	86,057	65,223	75.8	6,922	3,991	57.7
TOTALS	2,562,393	1,907,642	74.4	1,942,776	1,312,989	67.6	146,489	62,013	42.3

Source: NSF/NIH/USED/NEH/USDA/NRC Survey of Earned Doctorates (see Bibliography)

TABLE 10-4

EDUCATION PhDs BY SUBFIELD AND SEX, 1920 – 1991

	Total				Women				%Women						
SUBFIELD	1988	1989	1990	1991	1988	1989	1990	1991	'20–72	'73–82	'83–86	1988	1989	1990	1991
EDUCATION, TOTAL (1)	6339	6265	6484	6397	3507	3605	3736	3718	20.0	37.3	49.1	55.4	57.5	57.6	58.1
Curriculum and Instruction	810	836	838	803	503	542	543	545	34.4	44.7	55.5	62.1	64.8	64.8	67.9
Ed Admin & Supervision (5)	1737	1620	1640	1409	820	773	815	694	8.4	24.1	38.1	47.2	47.7	49.7	49.3
Educational Leadership (15)				473				255							53.9
Educational Media (4)	67	75	55	73	26	30	30	39	10.7	25.1	52.7	38.8	40.0	54.5	53.4
Ed Statistics & Research (12)	50	58	58	79	26	36	41	45		33.9	64.3	52.0	62.1	70.7	57.0
Ed Testing, Eval, & Meas(12)	55	42	40	31	26	26	27	13	15.9	33.9	68.2	47.3	61.9	67.5	41.9
Ed & School Psychology (4)									29.2	44.6	52.5				
Educational Psychology (14)	321	298	321	321	200	176	207	207				62.3	59.1	64.5	64.5
School Psychology (14)	98	85	87	90	53	57	51	55				54.1	67.1	58.6	61.1
Social Foundations	122	112	87	108	56	61	47	58	22.7	33.4	46.3	45.9	54.5	54.0	53.7
Special Education (4)	257	256	225	226	194	204	161	166	27.9	50.8	64.4	75.5	79.7	71.6	73.5
Student Counselling, Pers (4	322	268	301	269	185	158	167	156	21.3	38.8	49.0	57.5	59.0	55.5	58.0
Higher Education (3)	399	369	422	344	222	207	239	187	18.4	32.3	46.0	55.6	56.1	56.6	54.4
Pre–elementary Education (	83	63	41	86	73	51	37	74			89.1	88.0	81.0	90.2	86.0
Elementary Education (2)	93	100	109	73	71	80	84	56	41.5	61.9	77.8	76.3	80.0	77.1	76.7
Secondary Education(2)	68	53	56	40	38	25	39	26	17.0	34.0	62.5	55.9	47.2	69.6	65.0
Adult & Continuing Ed (3)	229	236	210	208	125	153	130	123	20.7	36.0	52.4	54.6	64.8	61.9	59.1
TEACHING FIELDS	986	971	921	970	538	542	483	553	21.1	40.7	46.2	54.6	55.8	52.4	57.0
Agricultural Education (2)	32	35	38	49		7	7	11	1.7	4.7	19.9		20.0	18.4	22.4
Art Education (6)	42	39	44	28	27	18	26	21	27.9	47.2	75.5	64.3	46.2	59.1	75.0
Business Education (6)	44	40	34	32	17	25	23	19	29.3	39.0	75.1	38.6	62.5	67.6	59.4
English Education (6)	57	51	52	58	41	35	26	43	29.1	52.2	75.9	71.8	38.6	50.0	74.1
Foreign Languages Ed (6)	53	34	31	45	36	22	19	19	29.2	50.9	91.9	67.9	64.7	61.3	42.2
Health Eduation (10)	86	101	95	79	67	75	69	53			74.1	77.9	74.3	72.6	67.1
Home Economics Education	17	19	10	21	17	18	9	20	96.9	97.7	173.6	100	94.7	90.0	95.2
Industrial Arts Education (6)	11	17	18	13	2	3	4	3	0.4	3.1	8.9	18.2	17.6	22.2	23.1
Mathematics Education (6)	55	68	66	73	31	41	41	41	16.5	31.1	61.1	56.4	60.3	47.0	56.2
Music Education (6)	76	98	78	96	29	35	35	40	13.8	29.6	40.5	38.2	35.7	44.9	41.7
Nursing Education (11)	34	29	24	18	32	29	24	18		98.9	136.4	94.1	100.0	100.0	100.0
Physical Education (13)	183	177	190	185	82	77	78	80	27.4	34.8	41.0	44.8	43.5	41.1	43.2
Reading Education (8)	74	95	83	102	65	83	62	85		76.7	78.1	87.8	87.4	74.7	83.3
Science Education (2)	67	48	72	72	27	22	24	43	19.4	23.0	44.2	40.3	45.8	33.3	59.7
Social Science Education (6	23	13	11	19	5	6	5	12	18.0	29.0	69.8	21.7	46.2	45.5	63.2
Speech Education (7)	5	1	5	1	4		3	1		58.4	277.8	80.0		60.0	100.0
Technical Education (14)	13	28	15	25	3	12	6	14				23.1	42.9	40.0	56.0
Trade & Industrial Ed (6)	67	47	18	17	26	14	7	3	5.6	28.5	41.1	38.8	29.8	38.9	17.6
Other Teaching Fields (9)	47	31	37	37	27	20	25	27	41.2	59.9	66.4	57.4	64.5	67.6	73.0
Education, General (1)	363	428	539	423	196	249	318	258	19.7	41.2	48.1	54.0	58.2	59.0	61.0
Education, Other (2)	279	395	534	371	155	235	317	208	30.5	50.8	53.1	55.6	59.5	59.4	56.1

(1) "Education," many fields listed as a single field until 1960, then as 16 subfields plus "Education, Genaral." in 1960. (2) Added in 1966. (3) Added in 1971. (4) Added in 1962, split into "Educational Psychology" & "School Psych" in 1989 (5) Added in 1960 as "Administration" changed in 1962 to "Admin, & Supervision." (6) Added in 1963. (7) Added in 1975. (8) Added in 1976. (9) Added in 1963 as "Other Special Field," changed in 1968 to "Other Fields" (meaning other teaching fields). (10) Added in 1983. (11) Added in 1980. (11) Name changed in 1983. (13) Name changed from "Physical Education, Health & Recreation" to "Physical Education" in 1983. (14) Added in 1989. (15) Added in 1991

SOURCE: Office of Personnel Management, unpublished tabulations

TABLE 10-5

FEDERAL WORKERS EMPLOYED IN EDUCATION BY OCCUPATIONAL TITLE, SEX AND MINORITY STATUS, SEPTEMBER 30, 1991

OCCUPATIONAL TITLE	ALL EMPLOYEES			TOTAL MINORITY				BLACK		HISPANIC		ASIAN		AM. INDIAN		WHITE	
	TOTAL	WOMEN	% W	TOTAL	%	WOM	% W	No.	% B	No.	% H	No.	% A	No.	% I	No.	% W
Gen Education & Training	13500	10273	76.1	1912	14.2	1612	84.3	1244	9.2	372	2.8	165	1.2	131	1.0	11588	85.8
Education & Vocational Training	9598	5539	57.7	2246	23.4	1521	67.7	875	9.1	267	2.8	162	1.7	942	9.8	7352	76.6
Education Program	503	278	55.3	183	36.4	120	65.6	138	27.4	25	5.0	4	0.8	16	3.2	320	63.6
School Administration	31	15	48.4	5	16.1	4	80.0	5	16.1	0		0		0		26	83.9
Public Health Educator	42	30	71.4	24	57.1	17	70.8	3	7.1	0		0		21	50.0	18	42.9
Secondary Teaching	6	5	83.3	2	33.3	2	100.0	2	33.3	0		0		0		4	66.7
Special Education	4	3	75.0	0		0		0		0		0		0		4	100.0
Education Research	72	31	43.1	13	18.1	6	46.2	5	6.9	4	5.6	4	5.6	0		59	81.9
Education Services	88	33	37.5	8	9.1	4	50.0	6	6.8	2	2.3	0		0		80	90.9
Instructional Systems	173	85	49.1	28	16.2	14	50.0	17	9.8	5	2.9	4	2.3	2	1.2	145	83.8
Librarian	2152	1624	75.5	282	13.1	227	80.5	155	7.2	29	1.3	88	4.1	10	0.5	1870	86.9
Archivist	437	152	34.8	28	6.4	14	50.0	25	5.7	1	0.2	1	0.2	1	0.2	409	93.6
Museum Crurator	389	153	39.3	30	7.7	16	53.3	17	4.4	4	1.0	3	0.8	6	1.5	359	92.3
TOTALS	26995	18221	67.5	4761	17.6	3557	74.7	2492	9.2	709	2.6	431	1.6	1129	4.2	22234	82.4

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Admissions Testing Program of the College Board, 45 Columbus Ave., New York, NY 10023-6917
National Report, College Bound Seniors 1984 through *1991* copyright by the College Board
Profiles: College Bound Seniors, 1988 copyright by the College Board

American Association for the Advancement of Science, 1333 H St., NW, Washington DC 20005
Investing in Human Potential: Science and Engineering at the Crossroads, edited by Marsha Lakes Matyas and Shirley M. Malcom, 1991.

American Association of Colleges of Nursing One Dupont Circle, Suite 530, Washington DC 20036
1990-91 Enrollment and Graduations in Baccalaureate and Graduate Programs in Nursing 1991.
1990-91 Faculty Salaries in Baccalaureate and Graduate Programs in Nursing 1991

American Assocation of Colleges of Osteopathic Medicine, 6110 Executive Blvd., Suite 405, Rockville MD 20852
Annual Report 1981 through *1991*

American Association of Colleges of Pharmacy, 1426 Prince St., Alexandria, VA 22314
Degrees Conferred by Schools and Colleges of Pharmacy 1974-75 through *1989-90*
1991-92 Profile of Pharmacy Faculty

American Association of Colleges of Podiatric Medicine, 1350 Piccard Drive, Suite 322, Rockville MD 20850
Annual Reports on Enrollments in Colleges of Podiatric Medicine 1969-1988
Personal Communication, October 1989 and May, 1992.

American Association of Dental Schools, 1619 Massachusetts Ave., NW, Washington, DC 20036
Annual Reports by the Council on Dental Education

American Bar Association, Section of Legal Education and Admission to the Bar, Office of the Consultant on Legal Education, Indiana University, 550 West North St., Suite 350, Indianapolis, IN 46202-3126
A Review of Legal Education in the United States Fall 1970 through *Fall 1990*

American Chemical Society, 1155 16th St., NW, Washington DC 20036
"Committee on Professional Training 1990 Annual Report," *Chemical and Engineering News,* May 20, 1991.
Salaries 1981, 1983, 1987, 1990, and *1991*
Women Chemists 1990 by Nina Roscher, December 1990

American College Testing Program as reported in the *CHRONICLE OF HIGHER EDUCATION* April 11, 1990

American Council on Education, One Dupont Circle, NW, Washington, DC 20036
1990 Fact Book for Academic Administrators
Minorities in Higher Education, Eighth Annual Status Report, 1989
Tabulations by the Division of Policy Analysis and Research
Data on Women College Presidents, Office of Women in Higher Education, 1991

American Dental Association Division of Educational Measurements, 211 East Chicago Avenue, Chicago, IL 60611
Annual Report on Dental Education 1975-76 through *1989-90;* Supplement 5 to the 1988-89 Report, "Dental School Faculty;" and personal communication, March 1992

American Geological Institute 4220 King St., Alexandria, VA 22302-1507
Geoscience Student Enrollment and Degree Survey 1987-88 through 1990-91
Personal Communication 1992
"Women in Academia: Students and Professors Revisited," *GEOLOGY,* V. 15, Aug. 1987

American Institute of Architects, 1735 New York Avenue, NW, Washington DC 20006
Personal Communication, Dec. 1985, Oct. 1987, Nov., 1989 and Jan. 1991

American Institute of Certified Public Accountants, 1211 Avenue of the Americas, New York, NY 10036-8775
Minority Recruitment and Equal Opportunity Committee, 1981 through *1989,* by Sharon L. Donahue

American Institute of Physics, 335 E. 45th St., New York, NY 10017
Enrollments and Degrees Pub No. R-151.28
Graduate Student Survey Pub No. R-207.14, .16, .18, .20 and .21 and .23, 1982, 1984, 1986, 1988-1991.

American Mathematical Society, Box 6248, Providence, RI 02904
1991 Annual AMS-MAA Survey, ***Notices*** of the American Mathematical Society, 38:5 (May/June 1991) and November 1991
"Vital Statistics in the Mathematical Sciences..., Fall 1988," ***Notices*** of the American Mathematical Society, May/June 1989 and November 1990

American Medical Association 535 N. Dearborn St., Chicago, IL 60610
"Women in Medical Specialty Societies," by Deborah I. Allen. ***Journal of the American Medical Association*** v. 262, No. 24, December 22, 1989
"Undergraduate Medical Education," ***Journal of the American Medical Association,*** v. 234, No. 13; v. 238, No. 26; v. 240, No. 26; v. 243, No. 9; v. 246, No. 25; v. 248, No. 24; v. 250, No. 12
Journal of the American Medical Association March 1980, December 24/31 1981, December 25 1982

American Optometric Association, 600 Maryland Avenue, SW, Washington, DC 20002
Surveys of Enrollments and Graduates by the Council on Optometric Education, 1985-91

American Podiatry Association 20 Chevy Chase Circle, NW, Washington, DC 20015
Personal Communication January 1991

American Political Science Association 1527 New Hampshire Avenue, N.W., Washington D.C. 20036
Brintnall, Michael, "Affirmative Action: Women and Minorities in the Profession," ***PS: POLITICAL SCIENCE AND POLITICS,*** March 1992, and earlier studies by Robert J-P. Hauck
APSA Departmental Services Program 1989-90 Survey of Departments

American Psychological Association, 750 First St., N.E., Washington, DC 20002-4242
1990-91 Survey of Graduate Departments of Psychology (with Council of Graduate Departments of Psychology)

American Veterinary Medical Association/Association of American Veterinary Medical Colleges 1522 K St., NW, Suite 828, Washington, DC 20005
Personal Communications, October 1987, January 1990, March, 1992

Association of American Medical Colleges, One Dupont Circle, NW, Washington DC 20036
Facts: Applicants, Matriculants, and Graduates 1984-1990 October 1990
Minority Students in Medical Education Facts and Figures VI, December, 1991

Association of American Veterinary Medical Colleges, 1023 15th St., N.W., Third Floor, Washington DC 20005-2602
Annual Studies of Enrollments and Graduates in Veterinary Medicine, 1968-69 - 1991-92
Personal Communication

Association for Computing Machinery 1515 Broadway, New York, NY 10036
David Gries and Dorothy Marsh, "The 1989-90 Taulbee Survey," ***Communications of the ACM,*** January 1992, 35:1, p. 135

Association of Schools & Colleges of Optometry 6110 Executive Blvd., Suite 514, Rockville, MD 20852
Annual Surveys of Optometric Educational Institutions: Students and Faculty, 1973-74 - 1991-92
Personal Communication, April 1992

CHRONICLE OF HIGHER EDUCATION, 1255 Twenty Third St., NW, Suite 785, Washington DC 20037
"College Enrollment by Racial and Ethnic Group, March 18, 1992
"Minority Group Enrollment at Colleges Rose 10% from 1988 to 1990," by Jean Evangelauf, January 22, 1992

Civil Service Commission, U.S. *See* **Office of Personnel Management, U.S.**

College Entrance Examination Board, Educational Testing Service, *See* **Admissions Testing Program**

Commerce, U.S. Department of, Bureau of the Census, Washington, DC 20233
"Special Report on Hispanics, 1987"
1990 Census of Population, Population Profile, Advance Release, June 11, 1991.
1980 Census of Population, Supplementary Report, May 1981
"Educational Attainment in the United States" ***Current Population Reports*** , Series P-20
Personal Communication, March 1992

Cooperative Institutional Research Program, American Council on Education and University of California, Los Angeles, Graduate School of Education, UCLA, 405 Hilgard Avenue, Los Angeles, CA 90024
The American Freshman: National Norms for Fall 1971 through *Fall 1989*

Commission on Professionals in Science and Technology, 1500 Massachusetts Ave., NW, Suite 831, Washington DC 20005
Miscellaneous Charts from various *Occasional Papers* by Betty M. Vetter, 1989-1992

Council of Chief State School Officers, State Education Assessment Center, Science and Mathematics Indicators Project, One Massachusetts Ave., N.W., Suite 700, Washington DC 20001-1431
Rolf K. Blank and Pamela Engler, *Has Science and Mathematics Education Improved Since A Nation at Risk?* January 1992

Education, U.S. Department of, National Center for Education Statistics, 400 Maryland Ave., SW, Washington DC 20005
Degrees and Other Formal Awards Conferred Surveys, 1987-88, 1988-89 and 1989-90, unpublished
Earned Degrees Conferred, Series *1947-48* through *1986-87*
Digest of Education Statistics, 1990
The Condition of Education, 1989
Profiles of Faculty in Higher Education Institutions, 1988
The Traditionally Black Institutions of Higher Education 1886-1962 by Susan T. Hill
Women's Participation in First-Professional Degree Programs in Medicine, Dentistry, Veterinary Medicine and Law, 1969-70 through 1974-75 (NCES 76-023)

Education, U.S. Department of, Office of Educational Research and Improvement, Washington DC 20208
Race/Ethnicity Trends in Degrees Conferred by Institutions of Higher Education: 1978-79 through 1988-89, NCES 91-212, January 1991
Profiles of Faculty in Higher Education Institutions, 1988 (NCES 91-389)
National Higher Education Statistics: Fall 1991 (NCES 92-038)

Educational Testing Service, Princeton New Jersey, 08541
The Mathematics Report Card: Are We Measuring Up? Report No. 17-M-10, June 1988
The Science Report Card: Elements of Risk and Recovery Report No. 17-S-01, September 1988
Sex, Race, Ethnicity, and Performance on the GRE General Test, 1991, Graduate Records Examination Program
Learning Science and Mathematics: The International Assessment of Educational Progress, 1992

Energy, U.S. Department of, Washington, DC 20425
Nuclear Engineering Enrollments and Degrees, 1991 and previous series 1984-90 (DOE/ER)
Appendixes to *Manpower Assessment Brief No. 9,* March 1989, *No. 11,*
April 1990, *No. 14* July 1991
Health Physics/Radiation Protection Enrollments and Degrees 1990 (DOE/ER)
Appendixes to *Manpower Assessment Brief No. 8,* March 1989, *No. 9,* June 1989, and *No. 15* July 1991

Engineering Manpower Commission of AAES, 1111 19th St., Suite 608, Washington DC 20036-3690
Engineering and Technology Degrees, 1969 through *1991*
Engineering and Technology Enrollments Fall 1969 through *Fall 1991*

Equal Employment Opportunity Commission, 1801 L St., N.W., Washington DC 20036
Personal Communication January 1992

Health and Human Services, U.S. Department of, Health Resources Administration, Washington, DC 20201
Monthly Vital Statistics Report V.38 no. 3, Supplement, June 29, 1989
Minorities and Women in the Health Fields, May 1974
Seventh Report to the President and Congress on the Status of Health Personnel in the U.S. March 1990
National Center for Health Statistics, Personal Communication February 1992

Higher Education Research Institute, Graduate School of Education, 320 Moore Hall, University of California, Los Angeles, CA 90024-1521
The American Freshman: National Norms for Fall 1971 through *1991*
The American College Teacher 1989-90

Horizon Research Inc., Suite 220, 111 Cloister Court, Chapel Hill, NC 27514
Science and Mathematics Education Briefing Book, Volume I, 1990

Hudson Institute Inc., Herman Kahn Center, 5395 Emerson Way, P.O. Box 26-919, Indianapolis, IN 46226
Workforce 2000: Work and Workers for the 21st Century, June, 1987

Institute of International Education, 809 United Nationas Plaza, New York, NY 10017
Open Doors 1990-91

International Association for the Evaluation of Education Achievement, U.S. National Coordinating Center, Stipes Publishing Company, 1012 Chester St., Champaign, IL 61820
The Underachieving Curriculum: Assessing U.S. School Mathematics from an International Perspective, 1987

Kistiakowsky, Vera, "Women in Engineering, Medicxine and Science" reported at the Conference on Women in Science and Engineering, National Research Council, June 11-12, 1973

Labor, U.S. Department of, Bureau of Labor Statistics, Washington DC 20212
"Annual Average Tables," *EMPLOYMENT AND EARNINGS* January 1992

National Academy of Sciences/National Research Council, 2101 Constitution Ave., NW, Washington DC 20418
"Doctorates Awarded 1920 to 1971 by Subfield of Doctorate, Sex and Decade," March 1973
Summary Report, 1972 through *1990: Doctorate Recipients from United States Universities*
Humanities Doctorates in the United States 1989 Profile
"Highlights from the 1989 Survey of Humanities Doctorates"
Survey of Earned Doctorates, sponsored by five Federal Agencies (National Science Foundation (NSF), National Institutes of Health (NIH), U.S. Department of Eduction (USED), National Endowment for the Humanities (NEH), and the U.S. Department of Agriculture (USDA)) and conducted by the National Research Council (NRC).
Biennial Survey of Doctorate Recipients 1989, unpublished tables

National Assessment Governing Board 1100 L Street, N.W., Suite 7322, Washington DC 20005-4013
The Levels of Mathematics Achievement : Initial Performance Standards for the 1990 NAEP Mathematics Assessment September, 1991

National Center for Health Statistics, Room 1-57, 3700 East West Highway, Hyattsville, MD 20782
Personal Communication, 1992

National Education Association, 1201 16th St., N.W., Washington DC 20036
Special Tables from "Estimates of School Statistics" 1990

National Science Foundation 1800 G St., NW., Washington DC 20550
Characteristics of Doctoral Scientists and Engineers 1987, (NSF 88-311) and...*1989*, (NSF 91-317)
Characteristics of Recent Science and Engineering Graduates 1988, (NSF 90-305), and *1990*, (NSF 91-121)
Foreign Participation in U.S. Science and Engineering Education and Labor Markets (NSF 81-316)
Graduate Students and Postdoctorates in Science and Engineering: Fall 1990, (NSF 91-320)
Immigrant Scientists and Engineers, 1988
Science and Engineering Indicators - 1990 (NSB 90-1)
Science and Engineering Doctorates 1966-1989 Early Release Summaries
Selected Data on Science and Engineering Doctorate Awards: 1990 (NSF 91-310)
Selected Data on Historically Black Colleges and Universities Academic Year 1988 *February 1990*
Science and Engineering Degrees: 1966-88, A Source Book (NSF 90-312)
Women and Minorities in Science and Engineering, January 1990
Survey of Recent Graduates, 1990, unpublished tables

Office of Personnel Management, U.S., Washington, DC 20415
Federal Civilian Workforce Statistics, September 30, 1991 (Unpublished)

Population Reference Bureau, 2213 M St., NW, Washington, DC 20036
Asian Americans: Growth, Change and Diversity, 1985

THE WASHINGTON POST, 1150 15th St., NW, Washington DC 20005
"Asian, Hispanic Population of U.S. Soars," March 11, 1991
"Hispanics Giving More Diversity," June, 1991

Western Interstate Commission on Higher Education WICHE Publications, Drawer P, Boulder, CO 80301
The Road to College: Educational Progress by Race and Ethnicity, by Robin Etter Zuniga, 1991, a joint publication with The College Board

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